

18430

SE 11

why can't you buy a used COSMIC?

070369
564

This may have puzzled you. Your friend may even refuse to part with his Cosmic at any price. Cosmic owner—a careful shopper—knows what's too valuable to lose. Besides, why trade the faithful 4-year-old Cosmic, while it still turns out crisp, perfect reproduction with greater fidelity, than most brand-new amplifiers!

One reason is, Cosmic lines up professional amplifiers and speaker systems designed for audio pros who make a living on recording. Cosmic does not kowtow to popular 'planned obsolescence' policy by which every model is outdated. Since Cosmic first introduced solid-state amplifiers in 1967, 4 years ahead of any other make,

the basic integrated-circuit design stays same—the concept was that advanced! This state-of-the-art currency in current models is maintained by featuring the recent advances, only when a definite advantage in price or performance exists. Even this is not the reason a Cosmic owner treasures his venerable amplifier. He says, "It's the sound, the matchless fidelity"—that's synonymous with the Cosmic name.

If you want your amplifier to stay as good as new, years from now, we suggest a visit to your nearest Cosmic dealer soon—and don't expect to find a used Cosmic at a 1/1 price!



COSMIC

THE SOUND THAT KNOWS NO BOUNDS.

MFD. IN INDIA BY:-

COSMIC RADIO

Vakola, Bombay-55. Phone: 535315-16 Grams: SOLIDSTATE

the height of fashion

Choose from the Himalayan heights of Fabina fashion. Suitings and Shirtings in a galaxy of captivating colours and tantalising textures.

While others follow, you set the pace with Fabina fabrics.

That's the height of fashion.
Fabina fashion.

FABINA

SUITINGS AND SHIRTINGS

Bina Silk Mills, Mulund, Bombay-80
Tel: 591329

ADVERTISING



WE

SALUTE OUR GALLANT ARMED FORCES

- THEY HAVE SET-UP THE HIGHEST STANDARDS OF COMBAT CAPABILITIES
- THEY HAVE MADE IT CLEAR AND UNMISTAKABLE THAT NO AGGRESSION AGAINST INDIA CAN TRIUMPH
- AGGRESSORS, IF STILL THERE BE ANY, MUST TAKE THE MOST SERIOUS NOTE

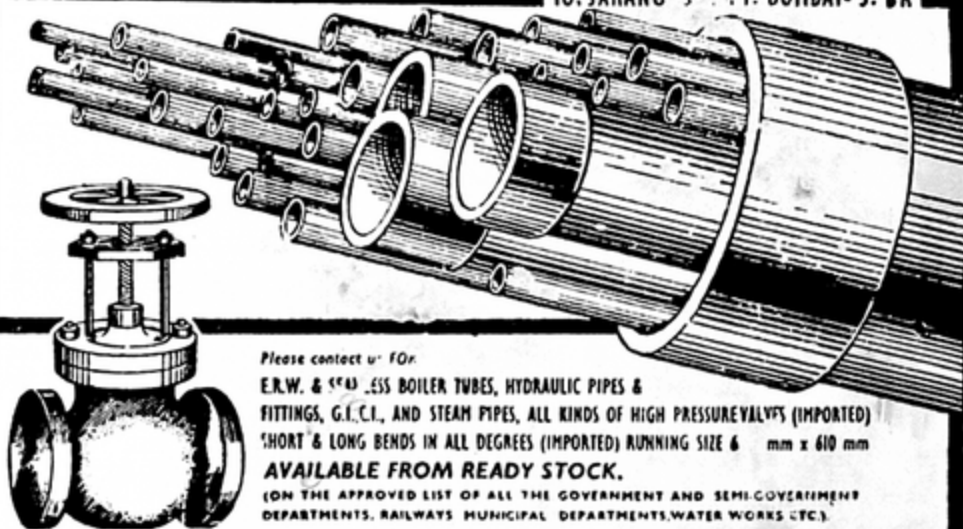
*The story of "Jai Jawan" will
continue with the most solid backing
of the entire Indian people*

Rolex **TRADING Co.**

Phone:- 320486

Gram:- "ROLEXTUBES"

10, SARANG STREET, BOMBAY-3, BR



Please contact us for:

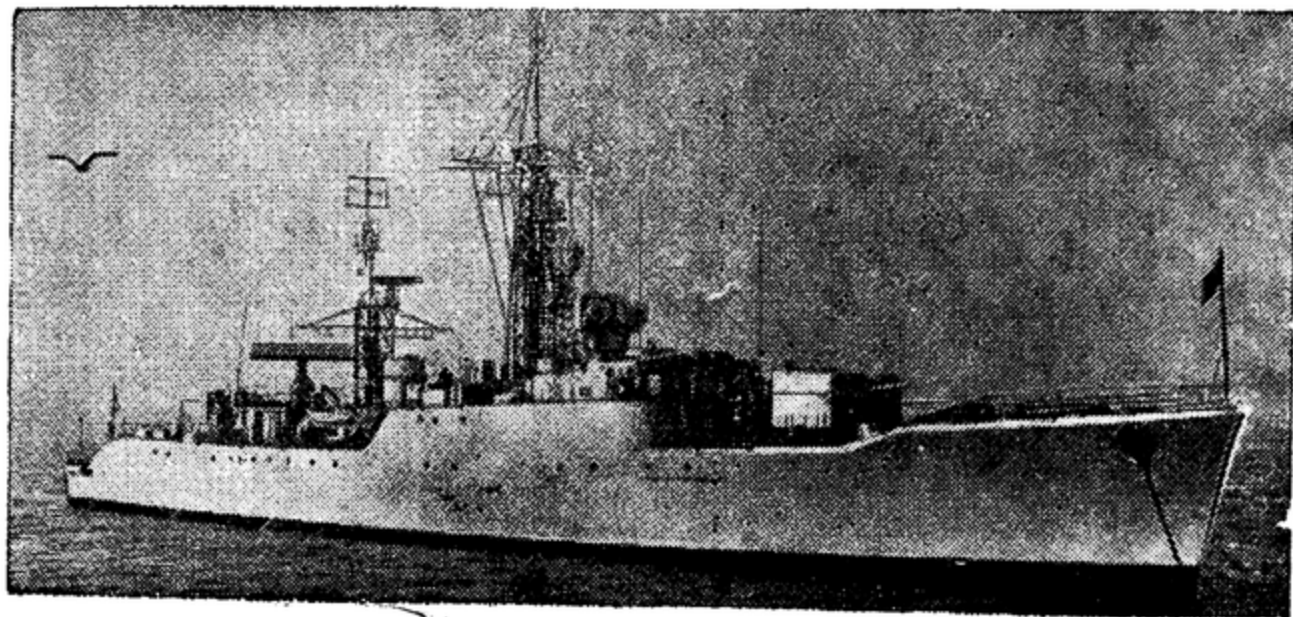
E.R.W. & S.W. LESS BOILER TUBES, HYDRAULIC PIPES &
FITTINGS, G.I., AND STEAM PIPES, ALL KINDS OF HIGH PRESSURE VALVES (IMPORTED)
SHORT & LONG BENDS IN ALL DEGREES (IMPORTED) RUNNING SIZE 6 mm x 610 mm
AVAILABLE FROM READY STOCK.

(ON THE APPROVED LIST OF ALL THE GOVERNMENT AND SEMI-GOVERNMENT
DEPARTMENTS, RAILWAYS, MUNICIPAL DEPARTMENTS, WATER WORKS ETC.)

WESTINGHOUSE

RECTIFIERS

for MARINE APPLICATIONS



- General DC Supplies
- Shore to Ship Power Supplies
- Startling and Servicing of I.N. Aircraft
- Shipyards
- Ship Maintenance and Repair
- Searchlights
- Degaussing
- Telephones
- Cathodic Protection.



HIND RECTIFIERS LTD.

Mahalaxmi Chambers, Bhulabhai Desai Road, Bombay-26. Tel. : 359386

Branches at :

CALCUTTA
DELHI
BANGALORE

Resident Representative at :
MADRAS

2, Woodburn Court, 10 Elgin Rd. Tel. : 447412
62, Daynand Road, Daryaganj Tel. : 272097, 276549
12/1 Richmond Road Tel. : 50959

3/33 Mount Road Tel. : 83969

FOR THE FIRST TIME IN INDIA
INDIGENEOUS MANUFACTURE OF
SILVER OXIDE ZINC BATTERY
REGAL BATTERY CORPORATION



Regd. Trade Mark

Manufacturers of Renowned

"JYOTI" BATTERY PLATES

"REGAL" BATTERIES & ACCESSORIES

"JYOTI" SILVER OXIDE ZINC ACCUMULATORS

■ MAGNESIUM CUPROUS CHLORIDE WATER-ACTIVATED BATTERIES

■ MAGNESIUM SILVER CHLORIDE WATER ACTIVATED BATTERIES AND OTHER SPECIAL PURPOSE BATTERIES

Manufactured According to:

N.R.D.C. PROCESS DEVELOPED BY

CECRI Karaikudi

Also

SILVER CADMIUM CELLS AND MERCURY CELLS

OFFICE

AGAKHAN BUILDING,
 4th, FLOOR,
 DALAL STREET, FORT,
 BOMBAY-1.
 Phone: 258746

FACTORY

48-A SAKI NAKA,
 OFF SAKI VIHAR ROAD,
 BOMBAY-72 AS.
 Phone : 581808

SALES OFFICE

AGAKHAN COMPOUND,
 44 H, CLARE ROAD,
 BYCULLA, BOMBAY-8.
 Phone : 374434

Gram : "JYOTIPLATE"

**SERVING THE NATION BY MEETING
 DEFENCE REQUIREMENTS**

**ALL ENQUIRIES MAY BE FORWARDED TO OUR
 SALES OFFICE**



ACKNOWLEDGEMENTS...WE ARE MOST DEEPLY INDEBTED TO:

UNION Ministry of Defence and the Services Chiefs for the continued support and patronage, which they have so kindly and generously given.

DIRECTORATE of Information, Ministry of Defence, Press Information Bureau, Government of India (**Bombay**), United States Information Services, British Information Services, University Library (**Bombay**) and the Times of India Information Services (**Bombay**) for making available to us source and reference material, as and when required.

DIRECTOR General of Military Training, Director General of National Cadet Corps, Director of Territorial Army and Director of Civil Defence for having examined the publication and having recommended it for inclusion in the libraries attached to their respective Units/Formations, Establishments and Training Institutions.

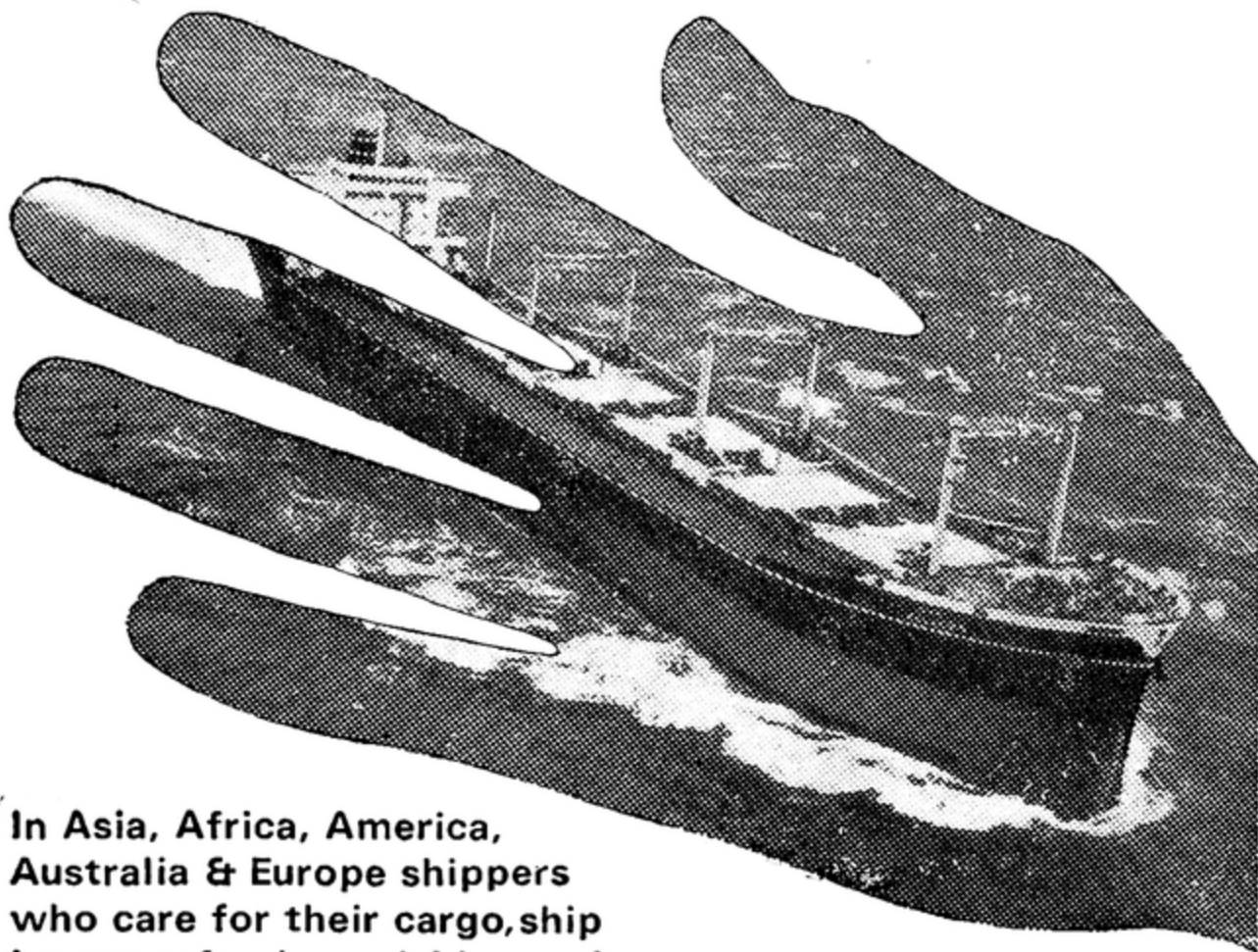
GOVERNMENTS of Andhra Pradesh, Assam, Gujarat, Jammu and Kashmir, Kerala, Madhya Pradesh, Madras, Maharashtra, Mysore, Punjab, Rajasthan, Uttar Pradesh and West Bengal for having examined the publication and having recommended it for inclusion in the libraries attached to Universities, Schools, Colleges and other public education agencies and organisations in their respective States.

PATRIOTIC industrial and commercial undertakings for having granted us the honour and distinction of featuring their advertisements and, thereby, demonstrating their complete solidarity with the CAUSE that the publication is set to serve.....Thorough understanding of the growing complexities of Modern War as the surest way to our "Victorious Survival."

STATE Bank of Travancore (**Bombay Branch**) for help and assistance given during periods of financial stress and strain.

PUBLISHERS.

WE GIVE A HELPING HAND TO SHIPPERS



In Asia, Africa, America,
Australia & Europe shippers
who care for their cargo, ship
by our safe, dependable services.

S-C-I a helping hand across the seas.

The Shipping Corporation Of India Ltd.

Steelcrete House, Dinshaw Wacha Road, Bombay-20 • Agents at all principal ports of the world.



AS a grateful nation, we will never forget the valour and self sacrifice of our armed forces. By their valour, daring and skill, matchless and unbeaten in military history, they have, during the war imposed upon us by the military junta of Pakistan, added yet another bright chapter to their already glory covered past. They have demonstrated in unmistakable terms that the security of India's frontiers, land, air and sea, is in safe hands.

V. V. GIRI
Union President and Supreme Commander
INDIAN ARMED FORCES

ROSE**The Queen of the
Flowers that grow.****INDIRA****The Queen of the
Leaders we know.**

Flowers may wither, leaves may decay
But in our hearts—Indiraji, will always stay.

Many a wonders, she has performed
To raise our image, amongst one and all.

We the people, of this great land
Promise to move, hand in hand.

Doing our bit, united we stand
Helping our leader, to strengthen our land.

Progress is the path, we follow today
Nothing can change, our purpose-filled way.

Our leader is great, our future is bright
For our Indiraji—is our guiding light.

**Nagpal Ambadi**

Nagpal Ambadi petro-Chem Refining Ltd. Manali, Madras-68
Industrial Assurance Bldg., Jamshedji Tata Road, Bombay-20.

SMT.
INDIRA GANDHI
BHARAT RATNA
Union
Prime Minister



WE have every reason to be proud of our armed forces . . . one of the finest fighting forces in the world. They are a community of gallant and tough men, imbued with a sense of service and ever alert to defend the country's freedom. By their daring exploits and complete devotion to duty in the defence of our motherland, the officers and men have rightly earned the appreciation and gratitude of the entire nation. Their heroic deeds will find honoured place in our national history.

We too help defend our country



Army, Navy and Airforce guard our frontiers, we guard our economy. Thus we are comrades in arms in the defence of the country and its interests.

You defend the country, we prevent the flow of Indian money abroad and earn **foreign exchange** through exports. Let us jointly uphold the glory of our **Motherland** and dedicate ourselves devotedly to safeguard the frontiers and enlarge our economic freedom.



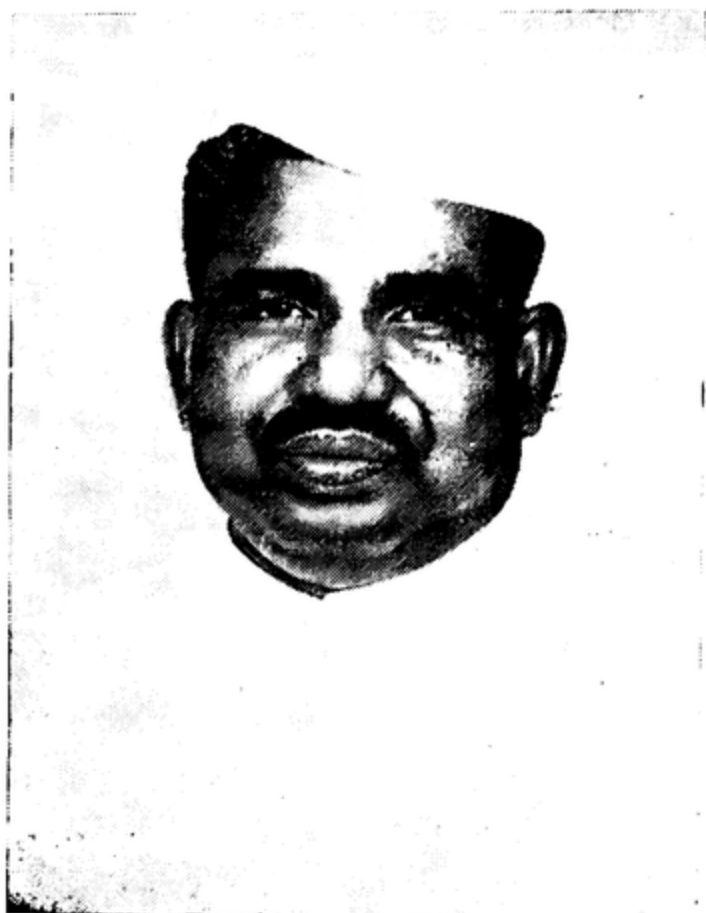
E. S. Patanwala

makers of **AFGHAN SNOW** beauty aids

E. S. PATANWALA, 62, E. S. Patanwala Marg, Bombay-27.



SHRI JAGJIVAN RAM
Union Minister of Defence



OUR ARMED FORCES have justified the faith reposed in them by the nation. They have redeemed the pledge that, if a war was forced on the country, it would be carried to the enemy's territory and fought on his soil. The success of our armed forces in the war imposed by the military junta of Pakistan, has reflected on our gallant officers and Jawans, on our brave airmen, and sailors, on the Commanders in the battle field, on the Chiefs of Staff and on the higher management. The performance of our armed forces has constituted a glorious chapter in the annals of military history. The daring and skill with which they planned and executed the operations, the care and foresight with which they husbanded, improvised, deployed and utilised the limited resources will ever remain an inexhaustible mine of objective lessons in modern warfare.

We salute

GENERAL

S. H. F. J. MANECKSHAW

**THE MOST DISTINGUISHED
SOLDIER SON OF OUR
FREEDOM ERA
WHO LED THE INDIAN ARMED
FORCES TO THE MOST DECISIVE
VICTORY IN THE ENTIRE MILITARY
HISTORY**

OF THE WORLD

●
**WE PLEDGE OUR CONTINUED SERVICES
TO THE ARMED FORCES FOR GREATER
GLORY TO OUR MOTHERLAND...INDIA**

●
LAXMI STEEL COMPANY

39, NAGDEVI CROSS LANE, BOMBAY-3

Grams : "LAXMISTEEL"

●
Phone : 323732

Shop : 110 Khetwadi Back Road, Bombay-4. Phone : 381779

STOCKISTS

**HIGH SPEED STAINLESS CARBON ALLOY AND
EN SPECIFICATION STEEL**

SUPPLIERS

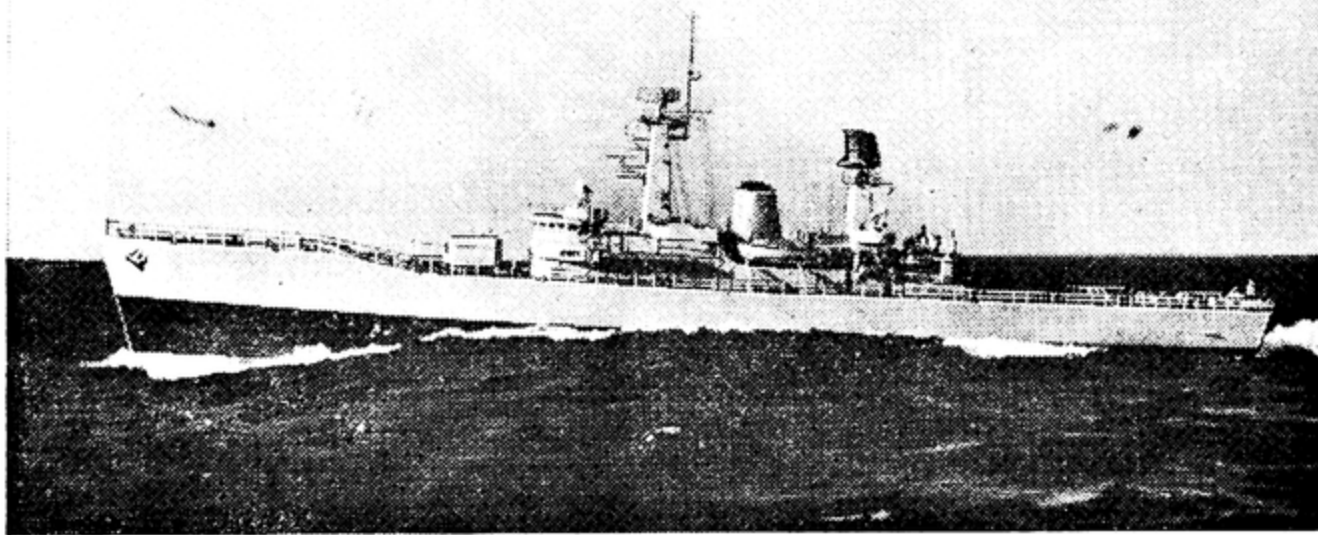
TO ARMED FORCES ESTABLISHMENTS

**GENERAL
S. H. F. J.
MANECKSHAW**
Chief of the Army Staff



THE task of soldiers is never complete. They have to be under training always and keep themselves ready to give a befitting reply to anybody who may look at the country with aggressive eyes. I consider myself a lucky soldier, I have risen to the highest rank, I have trained the army, I have led it during war and won it. There can be nothing more that a soldier can ask. There is nothing more that a soldier can value than the devotion of the men under his command and the gratefulness and gratitude of the people whose freedom, honour and integrity he has defended. This has been the task from time immemorial and this shall remain so till the time people hold their national freedom, honour and integrity, above everything else.

Philips the Modern Mariner



Philips love the navy. Many years of international association with navies and large ships have given Philips a thorough understanding of modern seafaring needs.

Philips make almost all of the electronic instruments that a ship could need: radar and telecommunication equipment, sound systems, lighting equipment, medical

apparatus, instruments for weapon control, test and measuring equipment and other control instruments.

In fact, Philips have already planned and supplied equipment in their range of manufacture to large ships built in India.

In all these products, emphasis is laid on reliability—of life expectancy and performance. Ruggedness is combined with sensitivity and accuracy. Every com-

ponent of Philips naval products is treated to withstand the roughest journeys and the corrosive sea air.

Philips are equipped as no other single manufacturer with the skills, and know-how to design and manufacture specialised naval equipment to suit the particular needs of any navy.

ADMIRAL S. M. NANDA
Chief of the Naval Staff



THE country is proud that, despite the old and ageing ships, the NAVY performed magnificently during the fourteen day war imposed on our country by the military junta of Pakistan. It dealt a crushing blow to the Pakistani Navy and effectively exercised contraband control, thus crippling the movement of ships from the Pakistani ports. All this was possible because of the dedicated work of officers and sailors of the Navy. However, while valuing these successes at sea, the country expects much more from the Navy in future. Therefore, it becomes our most sacred task to work harder, maintain ships and equipment with greatest care and be in a state of readiness at all times. I assure my countrymen that NAVY will never be found wanting in the discharge of its duties.

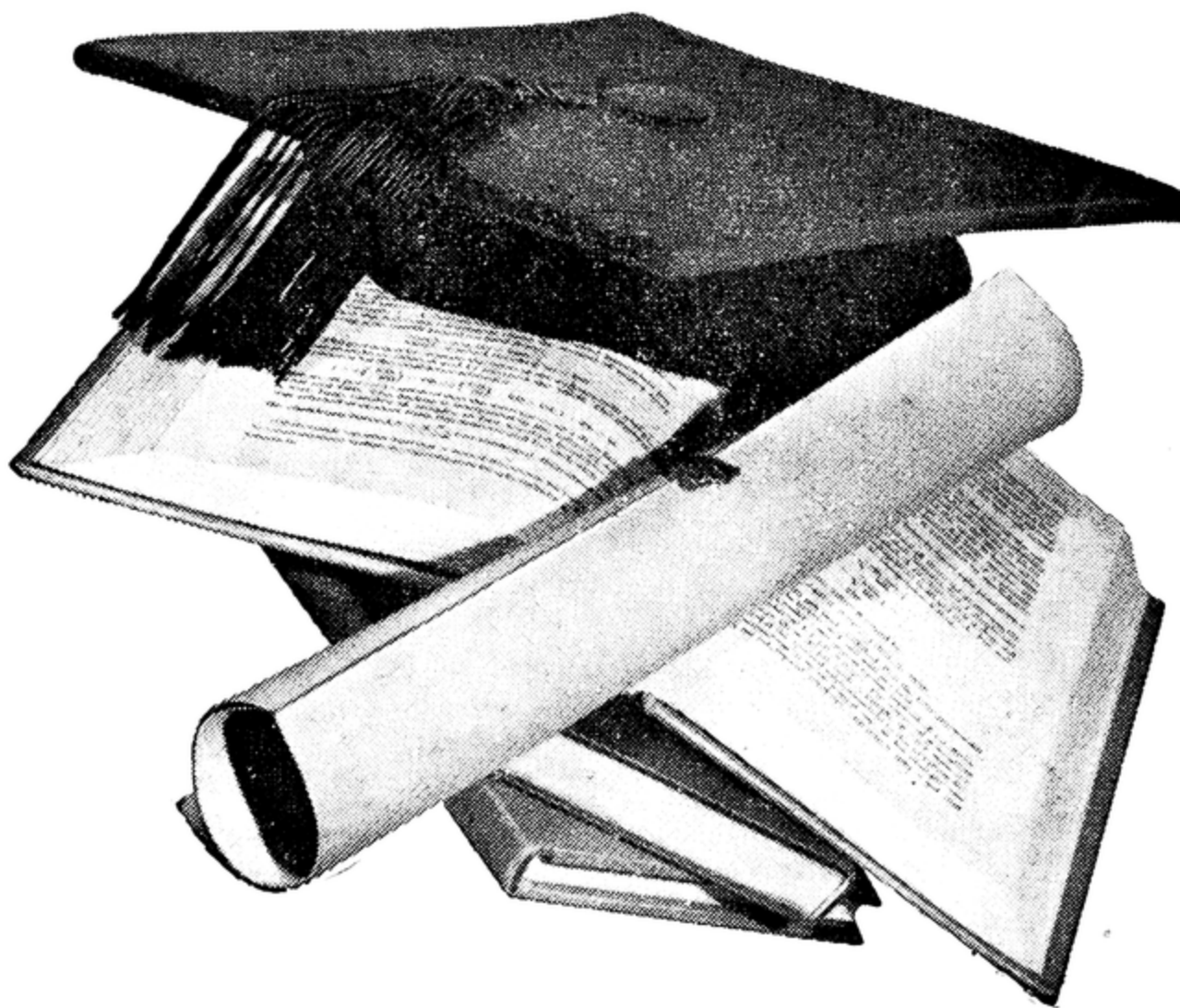
A talent for merit

"Knowledge
is its own justification
and its own reward."

Through scholarships, the
Tata Trusts enable intelligent
young men and women to
pursue higher education.

Today, Tata scholars are to be
found among scientists, engineers,
doctors and administrators—
people who shape the destiny
of generations to come.

TATA ENTERPRISES

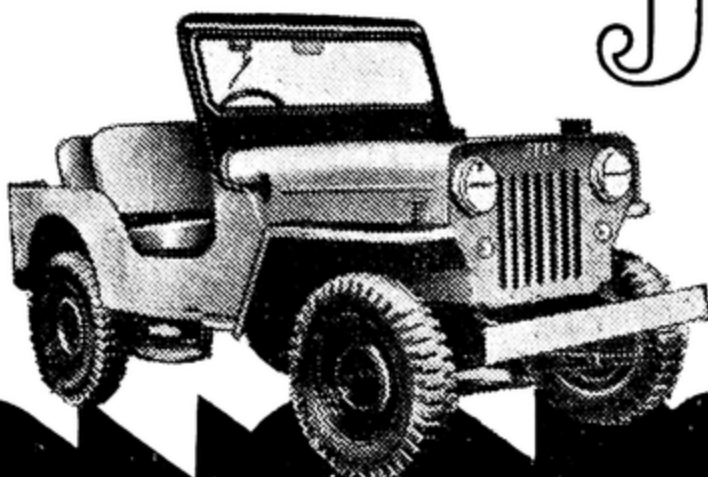


AIR CHIEF MARSHAL
P. C. LAL
Chief of the Air Staff



THE INDIAN AIR FORCE, the youngest of the THREE SERVICES, was called upon to stand its supreme test in the fourteen day war imposed upon our country by the military junta of Pakistan. The Service stood the test most magnificently. With the experience that the Service has gained during the war, I am confident that it can discharge its duties to the nation without any hesitation and with utmost efficiency, in any conflict, whatever its extent and intensity. However, there is the urgent and immediate need for much harder work. This will have to be done for the defence of our country. I am here to assure that this will be done . . . our skies will remain fully defended.

'Jeep'



TOUGH

4-LETTER
WORD
ON
WHEELS

DRIVE IT OFF THE ROAD. RUN IT THROUGH IMPOSSIBLE TERRAIN. ON A CART TRACK. UPHILL. DOWN A ROCKY SLOPE. THROUGH SLUSH AND MUD. VIRTUALLY ANYWHERE. YOU WILL BE ASTOUNDED BY ITS RUGGED VERSATILITY! POWERFUL, MANOEUVRABLE, THE WORLD'S BIGGEST LITTLE VEHICLE IS UNBEATABLE IN PERFORMANCE AND ECONOMY. IT HAS A 75 BRAKE HORSE POWER ENGINE, A 4-WHEEL DRIVE... CAN BE EASILY ADAPTED TO



MAHINDRA & MAHINDRA LTD.
BOMBAY • CALCUTTA • DELHI • MADRAS

13th Year of Publication

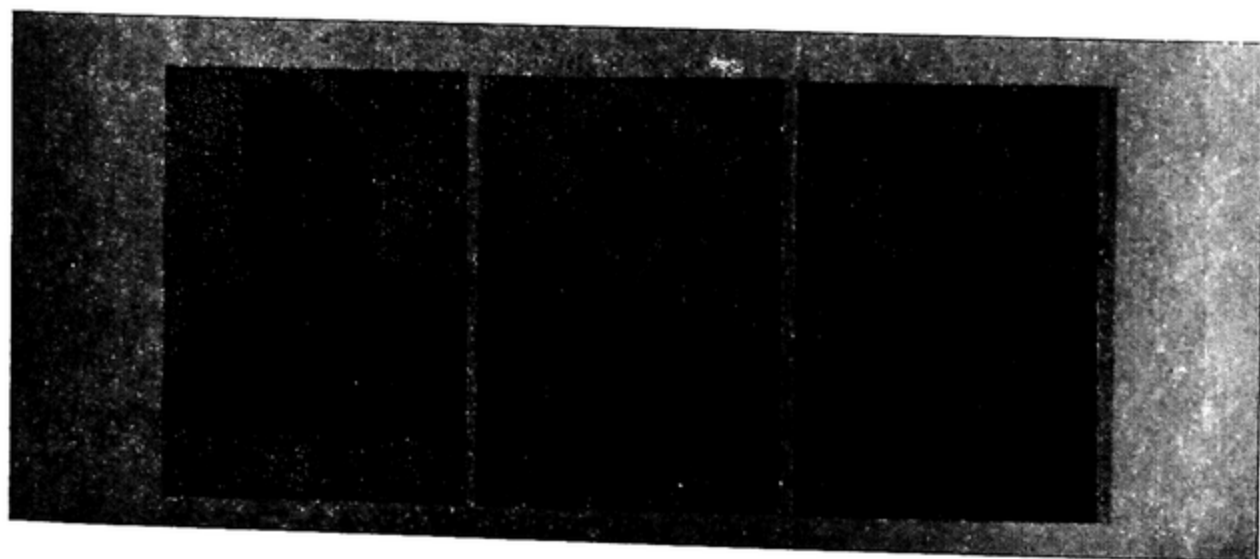
INDIAN ARMED FORCES YEAR BOOK 1971 (Covering)

Corrected and up-dated
upto December, 31, 1971

Price in India	Rs. 30/-
USA	\$ 7
UK	£ 50

(Postage Inclusive)

Compiled & Edited by
JASWANT SINGH





NOW AS EVER BEFORE Hallmark of Perfection

HEATERS

Band Type for injection moulding machines, extruder barrels, cross-heads, dies and for bakelite dies.

Strip Type for heating platens, Ovens and various other applications.

Cartridge Type for heating platens, radio cabinet moulds, etc.

Immersion Type for indirect heating of extrusion barrels, moulds, etc.

Tubular Type used for vacuum forming machines and where radiant heat is required.

With automatic temperature control, for plastic powders.

PRE HEATERS

THERMOTROLS

(Energy Regulators) for controlling heat of injection moulding machines, extruders, embossing machines, etc.

PYROTROLS

(Controlling Pyrometers) for controlling heat accuracies of 1 c. Mainly used in PVC, butyrate acetate and nylon extrusion and injection moulding.

ELECTRICALLY VARIABLE SPEED DRIVES

used for extruder take-offs, extruder main drives and other applications of varying capacities

TIP WELDING MACHINES

for fountain pen nibs.

Special jobs of complete electrical heating and temperature controlling undertaken.

For further particulars, please contact :

P. KHABARDAR ELECTRIC WORKS

191, Dr. Ambedkar Road, Opp. Chitra Cinema, Bombay-14.

Phone : 445674

PRINCIPAL CONTENTS

EDITORIAL:—The Victory.

CHAPTER I

MODERN WARS (1), The Causes (3), Beginings (2), Towards Understanding Wars (2), Military Studies (4), Total Wars (4), Philosophical Motivations (5), New Strategic Concepts (6), The Nuclear Era (7) The Fantastic Growth (9), Strange Turn Abouts (10), War Studies (11), Shape of the wars to come (14)

CHAPTER II

PRINCIPLES OF WAR... CLASSICAL CONCEPT (17), Not Rigid Laws (19), Jomini and Clausewitz (20), Other Authors (21), The Classical Concept (23), U.S. Version (23), U.S.S.R. Version (23), Objective (24), Morale (25), Concentration and Economy of Force (27), Mobility (29), Co-operation (30), Surprise (30), Security (31), Offensive Action (33), Public Opinion (34), Administration (35), Simplicity (35).

CHAPTER III

STRATEGY AND TACTICS (37), Decay of Classical Strategy (39), Modern Strategy (39), Authors of Modern Strategy (40), Current Soviet Concepts (42), Basis of Strategy (43), The Objective (43), Correct Analysis (45), The Means (45), Strategic Doctrine (45), Patterns of Strategy (46), Sub-Divisions of Strategy (46), Components of Strategic Decision (47), Modes of Strategy (47), Implementation of Strategy (48), Tactics (49), **Logistics** (51), Major Concepts (51), Key to Understanding (51), The Logistic Process (52), The Vital Role (52), Producer-Consumer Logistics (52), The Blending and Overlapping (52), The Dual Nature (53), **Logistic Principles** (55), The Snow-ball Principle (55), Logistic Discipline (56), Logistic Resources (56), The Under-plan/Over-plan Sequence (56), Priorities and Allocations (57), Information (57), Flexibility and Momentum (58) Feasibility (58), Command Control of Logistics (58).

CHAPTER IV

COMMAND AND DECISION (61), Command in Modern War (63), Command and Management (64), The Central Problems (64), The Military Mind (65), Institutionalisation (66), Centralisation VS Decentralisation (67), General Staff System (68), **Exercise of Command** (71), Leadership Qualities (71), Leader and Commander; Fundamental Differences (72), Current Challenges (73), Morale and Motivation (75), Initiative (75), Matter of Decision (76), The Human Approach (76), New Comprehension (77), Operational Plan (77), Verbal Orders (77), Mess of Details (77), Matching to The Job (78), Into the Battle (78), **The Soviet Concept of Command** (81), Supreme Command (81), Field Command (81), Elements of the Situation (81), Operational Plan (83), Prediction and Chance (83), Intelligence and Sabotage (83), Clarity of Orders (83), Oral Orders (84), Compliance (84), Discipline (84), Initiative (85), **Chinese Concept** (87), Modernisation beginnings (87), Officer Cadre (87), Staff System (88), Supreme Command (88), Professionalisation (89), Conscription (89), Party and the Officers (89), Command Channels (91), Initiative and Creative Ability (91), Internal Discipline (92), **The Decision Process** (95), The Specific Characteristics (95), The Sound Procedure (95), The Inter-Weaving Aspects (96), Politico-Military Blend (96), The Objective (97), Conceptual Unity (97), Analysis of the Objective (97), Calculating the Risk (98), Encounter VS Set-Piece Decisions (98), Puzzle VS Difficulty (99), Capabilities VS Intentions (100), The Doctrine of Completed Staff Work (101), The Soviet View Point (103).

CHAPTER V

FUNDAMENTALS OF INTELLIGENCE (105), Earliest Sources (107), Ancient China And India (107), Middle Ages (107), Embassies And Their Role (108), Military Intelligence (108), Mass Espionage (108), Internal Security Services (109), Private Services (109), World War-I (109), Between the Wars (109), World War II (110), Post-War Period (110), **Intelligence Collection** (113), The Scope (113), Peculiar Nature (113), The Priorities (114), Transmission Hazards (114), Transformation Into Power (115), Overt Intelligence (115), Covert and Clandestine Intelligence (115), The Art of Cover (118), Organisational Cover (118), Cover Organisations (118), Front Organisations (119), The Foreign Element (119), The Element of Falsity (119), Espionage (120), Penetration (120), Use of Machines (121), **Counter Intelligence** (123), The Cabots (123), Classical Aims (123), The Vital Difference (123), Counter-Intelligence VS Security (124), Counter Intelligence VS Counter-Espionage (125), Penetration (125), Deception (126), **The Soviet Set Up** (127) Post Revolution Period (127), Organisation and Administration (128).

CHAPTER VI


GUERRILLA WARFARE (131), Historical Settings (133), Current Importance (134), The Concept (134), Types and Objectives (136), Not Decisive (136), Fundamental Elements (136), **Fundamental Points** (139), Organisation (139), Time Dimension (140), Space Dimension (140), Terror and Subversion (140), Exploitation of Contradictions (141), Preparations (141), Patterns and Stages (142), **Guerrilla VS. Regular** (145), Concentration Vs. Dispersion (145), Centralisation VS Decentralisation (145), The Rear (145), The Targets (146) Strategic Objectives (146), Elements of Time And Space (146), Strategic Movements (147), Bases (147), The Fighters (147), The Leaders (148), The Reserves (148), Consequences (149), **Principles of Guerrilla Warfare** (151), Karl Marx and Engels (151), First Enumeration (151), Mao Tse Tung (153), Military Operations (154), **Counter-Insurgency/Counter Guerrilla Warfare** (157), Major Factors (157), The Phases (157), Military Operations (158), The Plan (159), **Davis Gulula's View Point** (161), Cold Stage

3 brothers

ATCO'S
Oxymycin
READY-TO-INJECT
I.M. SOLUTION

TONSILLITIS. SINUSITIS. BRONCHITIS. MASTOIDITIS. PNEUMONIA
WHOOPING COUGH
GONORRHOEA
OBSTETRIC AND GYNECOLOGIC INFECTIONS
SYPHILLIS
SURGICAL INFECTIONS
URINARY TRACT INFECTIONS
GASTROENTERITIS
BACILLARY DYSENTERY
INTESTINAL AMEBIASIS
CUTANEOUS INFECTIONS

PROVIDES
MOST EFFECTIVE
POWER
IN THE FIGHT
AGAINST
ALL
INFECTIONS



Oxytetracycline 50 mg./ml. & 125 mg./ml.
Injections and Capsules in 250 mg.
Provides most effective power in the
fight against all infections. True broad
spectrum activity against both gram
positive and gram-negative organisms
Pkgs: Injection: Box of 5 & 10 x 2 ml.
ampoules & 10 ml. R.C. vial
Capsules: Bottle of 4's & 100's

 **ATCO PHARMA LABORATORIES**
229/230, Wadala Udyog Bhuvan,
Bombay-31.

PRECISION
GAUGES & MANOMETERS

TEL-TRU **MANOMETERS &
TANK GAUGES**

For accurate measure of pressure vacuum draft etc., Any
liquid levels in any size or shape, open or closed. Ventedor
under pressure tank.

PREGA BRAND

- **PRESSURE GAUGES**
- **VACUUM GAUGES**
- **COMPOUND GAUGES**
- **DIAPHRAGM GAUGES**
- **RECEIVER GAUGES**

PRECISION INDUSTRIES

P.B. No 7514, GOREGAON (WEST), BOMBAY-62 CALL : 321800

Measures (161), Hot Stage Measures (161), The Strategy (163), From Strategy to Tactics (164), Sir Roberts Thompson's View Point (167), Clear Political Aim (167), Rule of Law (167), Overall Plan (167), Main Aim (168), The Base Areas (168), Intelligence (168), Simpson's View Point (169), Julian Pagent's View Point (171), Fundamental Requirements (171), Civil and Military Understanding (171), Command and Control (171), Good Intelligence (171), Mobility (171), Training (173) Operational Techniques (173), Support of the Population (173), Bases (173), Mobility (173), Supplies and Information (173), The Will to Win (173).

CHAPTER VII

AIR POWER (175), Impact on War (177), Air Space (177), Command of the Air (177), Characteristics of Air Power (178), Aircraft Type... Birth Criteria (179), Task of Air Power (181), Two Battles (181), Missions and Operations (181), Deployment (182), Elements of Air Power (General) (182), **Elements of Air Power (Functional)**, (183) Military Elements (183), Strategic Air Offensive Task (183), Tactical Offensive Task (185), Air Defence Task (186), **Air Defence Operations** (189), Active Air Defence (189), Passive Air Defence (190), Supporting and Logistic Role (190), Reconnaissance (191), Air Transport (192), Air Rescue (192), Parachute and Airborne Troops (193), Air Intelligence (193), The New Role (194), Civil Elements (194), Capabilities And Limitation (194), **Military Agents in Air Attacks** (197), Nuclear Agents (See Push Button War), Chemical Agents (197), Bacterial Agents (198), Post-War Debate (199), The Atomic Reliance (199), Guerrilla Warfare (200), The Change (201), Preparedness (201).

CHAPTER VIII

AIR POWER... POST-WAR AIR FORCES (203), **US Air Power** (205), Berlin Airlift (205), The Korean War (205), Fresh Build-up (206), V.T.O.L. Capability (206), The Brushfire Wars (206), The Vietnam Conflict (207), The Expanding Role (208), Proud Achievements (209), Present Organisation (210), Present Strength (211), New Developments (211), NATO (212), Organisation (212), Principal Commands (213), Allied Command (Europe) (213), Allied Command Central Europe (215), Allied Command Northern Europe (215), Allied Forces Southern Europe (215) Allied Command Atlantic (216), Allied Command Channel (216), Policy (216) NATO Countries (218), Great Britain (218), France (220), Greece (220), Italy (221), Canada (221), Portugal (221), Belgium (222), Denmark (222), Norway (222), Netherlands (222), Turkey (223), **Soviet Union** (225), The Fourth Five Year Plan (225), Ground Forces (225), Air Force (226), Training and Education (226), The New Phase... Nuclear Missiles (227), Military Theory... New Approaches (229), New Military Doctrine (229), Proud Achievements (230), Services Components (231), Present Strength and Organisation (233), **The Warsaw Pact** (235), Warsaw Treaty (235), Organisation (236), **Warsaw Pact Countries** (237), Bulgaria (237), Czechoslovakia (237), East Germany (237), Hungary (238), Poland (238), Rumania (238), Other European Countries (239).

CHAPTER IX

SEA POWER (241), The Meaning (243), Fundamentals of Sea Power (243), Elements of Sea Power (244), Current Developments (244), Underseas Capability (246), Task of Sea Power (247), Command of Sea (249), Maritime Strategy (250), Phases of Maritime Strategy, (251) Objectives of Maritime Strategy (251), Maritime Concentration (252), Operational Readiness (252), Naval Communications (252), Development (253), Tactical Advantages (254), Sea Battle (254), Battle Developments (254), Spotting the Shots (255), **Defence of Shipping** (257), Changing Nature and Character of Threats (257), Traditional Means (258), Fleet Air Defence (259), **Anti-Submarine Warfare** (261), Anti-Submarine Weapons (261), The Defensive Vision (262), Operational Process (262), Detection (262), Localisation (263), Identification (265), Destruction (265), **Mine Warfare** (267), Sea Mines... Main Characteristics (267), Limitations (268), Mining and Counter Mining Operations (268).

CHAPTER X

SEA POWER... POST-WAR NAVIES (271), Current Developments (272), **US Navy** (273), The Leader Force (273), First Post-War Constructions (275), Korean War and After (275), Nuclear Retaliation (277), Limited Warfare Period (278), Nixon's Doctrine (278), Current Developments (279), Present Organisation (280), Warship Strength (280), British Navy (283) Current Developments (283), Present Strength and Development (284), French Navy (285), **Other Countries...** Belgium (286), Canada (286), Denmark (286), West Germany (286), Greece (286), Italy (286), Netherlands (286), Norway (287), Portugal (287), Turkey (287), **Soviet Navy** (289), The Build Up Process (289), Admiral Gromov and Marshal Zakharov's Claims (291), Soviet Naval Objectives (292), Elements of Soviet Naval Power (292), Present Strength and Deployment (293), Other European Countries (294).

CHAPTER XI

PUSH-BUTTON WAR (297), First Beginings (299), Post-War Period... New Visions (299), The Armament Race (299), Expanding Nuclear Club (300), **Communist China** (301), Atomic and Hydrogen Detonations (301), The Ambitions (301), The Missile Programme (302), The Nuclear Threat... Extent (302), Strategic Arms Limitation Talks (303), Strategic Nuclear Weapons... Comparative Position... **USA... USSR** (307), Nuclear Missiles (307), Nuclear Submarines (307),

WITH OUR
WARMEST
GREETINGS
TO

**ALL OFFICERS AND MEN OF
OUR GALLANT ARMED FORCES
AUXILIARY ARMS AND
DEFENCE PRODUCTION
UNDERTAKINGS**

Phone
355651
CABLE
"AUTOVENUS"

VENUS AGENCIES

MIRABAI BUILDING,
18, BENHALM HALL LANE,
GIRGAUM-BOMBAY-4.

**WE SERVE TO KEEP YOUR VEHICLES MOVING—WHATEVER
THE BRAND—WHATEVER THE TYPE—
SUPPLY OF SPARE PARTS IS OUR BUSINESS**

**WE SALUTE
AND
DEDICTATE
OURSELVES**

**• THE OFFICERS AND MEN OF
OUR GALLANT ARMED FORCES,
FOR THE GLORY AND GREATNESS
BROUGHT TO OUR COUNTRY
• TO STRENGTHEN OUR NATIONAL
INDUSTRIAL BASE SO THAT THEY
HAVE GREATER FREEDOM OF ACTION
AND MANOEUVRE FOR GREATER GLORY.**

HEMANSU TRADERS

1305 PRASAD CHAMBERS (13th Floor)
BOMBAY-4

Strategic Bombers (307), Anti-Aircraft Missiles (308), United States of America (308), Soviet Union (309), Nuclear Weapons Systems (311), Nuclear Explosions...Types (311), Destructive Potential (312), Battle Environments (313), On Land (313), On the High Seas (314), In The Air (314), Soviet View Point (315), Tactics And Strategy (317), Beaufore's Concepts (317), Survival Tactics 317, Counter-Force-Counter-City Tactics : Shield Forces (319), Non-Nuclear Strategy (320) ; Strategy of Escalation (320), Counter Force Theory (324), Combined Deterrent Theory (325), Into Space and Beyond (327), Assault On Space (327), USSR POSITION (328), Space Stations (329), The New Note (329), Leaders Still (330), US-Moon Landing...Soviet Reactions (330), Lunar-16-Lunar-17 (330), Lunokhod-I (331), Military Significance (332), Military Purpose Satellites (332) Communications Satellites (332).

CHAPTER XII

INDIAN ARMED FORCES... TWENTY-FIVE YEARS OF EVOLUTION (337), War Time Scene (339).
The Political Trends (339), Imaginary Pakistan (340), Return of War Veterans (340), Indian National Army (341), Truncated India and Pakistan (342), Fate of the Armed Forces (344), Basis of Partition (345), Angry and Indignant Pakistan (346), Military Effects of Partition (346), Pakistani Version (347), The Pakistani Shield-Build up Moves (349), On the Islamic Front (349), Into The Western World (350), Indian Problems (353), The Social Structure (353), Non-Violence (353), Industrial Potential (354), Consolidation First beginnings (354), Fresh Build Up (355), Communist Threat (356), India at War... (359), Jammu and Kashmir (359), Indian Military Aid (360), Hyderabad (361), Junagadh (363), The Naga Hostiles (365), Liberation of Goa (367), The Mizo Hostiles (372), For World Peace (375), Korea (375), Indo-China (376), Gaza (UAR), (377), The Congo (379), The Undeclared Wars: Communist China (1962), (379), The War of Firsts (379), Chinese Military Build Up (380), Chinese Objectives (381), The Massive Invasion (382), Indian Defensive Measures (382), The Cease Fire (383), Cease Fire and After (383), Consequences in India (383), The Enquiry (385), Present Position (387), Pakistan First Total War (389), Ran of Kutch (389), Kashmir Again (389), The Guerrilla Phase (390), The Guerrilla Force...Build Up (390), Operation Guerrilla (390), Indian Counteraction (393), The Crossings (393), Haji Pir Pass (393), Battles of Sanjoi and Jaura Bridge. (394), The Shooting War (395), Chamb-Jaurian (395), The Grandiose Design (396), Indian Reactions (396), Assault Blunted (396), The Escalation (397), On the Fighting Fronts (397), Battle of Godra (399), The Khemkaran Pull Out (399), Battle of Assal Uttar (400), Battle of Philorah (401), Capture of Burki (402), Battle of Dograi (403), Air Actions (403), Naval Actions (404) Cease Fire (405) Balance Sheet (407).

It is regretted most deeply that there has been an error in numbering the Chapters in the main text. The Chapters may kindly be read in the following order).

CHAPTER XIII

PAKISTAN'S SECOND TOTAL WAR... THE STRANGEST WAR IN HISTORY (409), The Back-ground (411), Sick Birth (411), External Reliance (411), Physical Configuration (412) Armed Forces Structure (412), Military Governments (413), Anti-Indian Phobia (413), The Greater War Threat (414), The Immediate Causes (415), Electoral Results (415), Use of Force (415), The Refugees (415), Pakistani Build Up (417), Indian Preparations (419), First Steps (419), At the Services Level (419), Army (419), Air Force (420), Navy (421), Defence Production And Logistic Support (422), Armed Forces... Comparative Strength (423), India (423), Pakistan (424), Initial Operations... Mukti Bahini (425), The Revolt (425), Sabotage Operations (426), Mukti Bahini (426), The War (429), Pakistani Options (429), Eastern Sector... Indo-Bangla Combined Operations (430), Indo-Bangla Alliance (430), Indo-Bangla Offensive (430), Operations Corps.... II (431), Operations Corps XXXII (432), Operations Corps IV (432), The Tight Noose (433), Tangail (434), On to Dacca (435), The Surrender (435), The Historic Surrender Document (437), Western Theatre (439), Pakistani Offensive... Chamb and Poonch Sectors (439), Indian Offensive (440), Pratapur Sector (440), Punjab Sector (440), Shakargarh Sector (441), Ramgarh Sector (442), Sind Action (443), the Cease Fire (443), Air Operations (445), Indian Action (445), Western Theatre (445), Eastern Theatre (446), Counter Operations (447), Transport Support (447), Other Support Roles (447), The Naval Operations (449), The Tasks (449), Eastern Theatre (450), Death to Ghazi (451), Western Front (452), Defensive Measures (453).

CHAPTER XIV

ON THEIR SHOULDERS... THE MILITARY AWARD WINNERS. (In view of the vital importance of the names and actions of the soldiers sons of our soil whose outstanding performance made the un-precedented victory possible, coverage to the extent citations, etc, available at the time of going to the press has been given).

Military Awards; In the Presence of the Enemy (455), Other Than in the Presence of the Enemy (457), Distinguished Service Awards (457), Campaign Stars/Medals (457), Commemorative or Other Medals (458), Videsh Seva Medal (459), Military Award Winners, Padma Vibhushan, General S.H.F.H. Maneckshaw (461), Admiral Sardari Lal Nanda (461), Air Chief Marshal Pratap Chandra Lal (463), Padma Bhushan, Lt. Gen. Gopal Gurunath Bewoor (465), Lt. Gen. Kunhiraman Palat Candeth (465), Lt. Gen. Jagjit Singh Arora (466), Lt. Gen. Sartaj Singh (467), Lt. Gen. Sagat

Singh (467), Vice Admiral Surendra Nath Kohli (468), Vice Admiral Nilkanta Krishnan (468), Air Marshal Minoo Morwan Engineer (468), Air Marshal Hari Chand Dewan (469), Major General Inderjit Singh Gill (470), Shri Khushroo Framroz Rustomji (470), Shri Ashwani Kumar (471), Shri Sunder Singh Bedi (471), Shri Sirtaj Singh Sahi (471), **Param Vir Chakra**, Major Hoshiar Singh (473), 2nd Lt. Arun Khetarpal (471), L/Naik Albert Ekka (474), Flying Officer Nirmaljit Singh (475), **Maha Vir Chakra**, 2nd Lt. Shamsheer Singh Samra (477), Sub. Malkiat Singh (477), L/Naik Ram Ugrah Pandey (477), RFN. Pati Ram Gurung (477), Lt. Col. H.H.S. Bhawani Singh (477), Major Daljit Singh Narang (478), RFN. Dil Bhadur Chettri (478), Brigadier Joginder Singh Gharaya (478), Lt. Col. Prem Kumar Khanna (478), Major Anup Singh Gahlaut (478), Major Basidev Singh Mankotia (479), Subedar Mohinder Singh (479), Sepoy Pandurang Salunkhe (479), Brigadier Anant Vishwanath Natu (479), Lt. Col. Rajkumar Singh (479), Major Jaivir Singh (480), Major Kuldeep Singh Chandpuri (480), Major Chewang Rinchen (480), Brigadier Mohindrer Lal Whig (480), Lt. Col. Harish Chandir Pathak (481), Lt. Col. Kulwant Singh Pannu (481), Major Dharam Vir Singh (481), Brigadier Krishna Swami Gowri Shankar (483), Lt. Col. Kashmiri Lal Ratan (483), Lt. Col. Rattan Nath Sharma (483), Lt. Col. Surender Kapur (483), Captain Pradip Kumar Gour (483), Lt. Col. Chittoor Venugopal (484), Major Vijay Rattan Chowdhari (484), L/Naik Drig Pal Singh (484), L/Naik Nar Bhadur Chettri (485), Col. Udai Singh (485), Lt. Col. Sukhjit Singh (485), Brigadier Sant Singh (486), Brigadier Hardev Singh Kler (486), Brigadier Anthony Herolds Edward Michigan (486), Lt. Col. Ved Prakash Ghai (487), Captain Shankar Shankhapan Walkar (487), Havaldar Bir Bhadur Pun (489), Havaldar Thomas Phillopose (489), L/Naik Shingara Singh (490), Lt. Col. Ved Prakash Airy (490), Lt. Col. Raj Mohan Vohra (490), Lt. Col. Hanut Singh (491), Major Amarjit Singh Bal (491), Brigadier Joginder Singh Bakshi (491), Sepoy Ansuva Prasad (491), Brigadier Arun Shridhar Vaidya (493), Captain Devinder Singh Ahlawat (494), Lt. Col. Shamsheer Singh (494), Major Vijay Kumar Berry (494), Brigadier Anand Sarup (495), Naik Sugan Singh (495), **Maha Vir Chakra (Navy and Air Force)**, Commander Kasargod Patanshotti Gopal Rao (497), Commander Babru Bahan Yadav (497), Captain Mahindra Nath Mulla (497), Lt. Commander Santosh Kumar Gupta (498), Lt. Commander Joseph Pius Alfred Noronha (498), Commander Mohan Narayan Rao Samant (498), Captain Swaraj Parkash (499), Leading Seaman C. Singh (499), Wing Commander Ramesh Shankar Benegal (501), Wing Commander Harcharan Singh Manget (501), Wing Commander Vidya Bhushan Vasisht (501), Sqn. Leader Mahavendra Banerji (502), Wing Commander Cecil Vivian Parker (502), Sqn. Leader Ravinder Nath Bhardwaj (502), Wing Commander Padmanabha Gautam (503), Wing Commander Manmohanbir Singh Talwar (503), Wing Commander Swaroop Krishna Kaul (503), Wing Commander Allan Albert D'Costa (504), Group Captain Chandan Singh (504), **Border Security Force** (505), **Vir Chakra (Army)** (507), **Vir Chakra (Air Force)** (511), **Vir Chakra (Navy)** (512), **Vir Chakra (Border Security Force)** (512), **Shaurya Chakra (Army, Navy, Air Force)** (513), **Param Vishisht Seva Medal (Army)**; Maj. Gen. Harish Chandra Rai (515), Maj. Gen. Jack Fredrick Ralph Jacob (515), Maj. Gen. Biswa Nath Sarkar (515), Maj. Gen. Gurbaksh Singh (515), Maj. Gen. Dalbir Singh (516), Maj. Gen. Lachman Singh Lehl (516), Lt. Gen. Edgar George Pettengell (516), Maj. Gen. Narayan Pillai Sankran Nair (516), Maj. Gen. Mohinder Singh Brar (516), Maj. Gen. Eustace D'Souza (517), Maj. Gen. Kundau Singh (517), Maj. Gen. Suraj Prakash Malhotra (517), Maj. Gen. Raizada Dev Raj Anand (518), Maj. Gen. Rustam Framji Khambatta (518), Maj. Gen. Frank Dalton Larkins (518), Maj. Gen. Sujan Singh Uban (519), Brigadier Shabeg Singh (519), Maj. Gen. Stanley Leslie Menezes (519), Maj. Gen. Walter Anthony Gustave Pinto (519), Maj. Gen. Bejoy Mohan Bhattacharyea (521), Maj. Gen. Anil Kumar Biswas (521), Maj. Gen. Ved Prakash (522), Maj. Gen. Ram Dharmadas Hira (522), Maj. Gen. Benjamin Franklin Gonslaves (522), Maj. Gen. Kotikalapudi Venkata Krishnarao (523), Maj. Gen. Prature Vankata Ramaniah (523), **NAVY**... Rear Admiral Elenjikal Chandy Kuruvila (525), Captain Sree Harilal Sarma (525), **Commodore Bishambar Nath Thapar** (525), Captain Mohan Singh Garewal (525), Rear Admiral Banish Raj Singh (526), **Commodore Dorab Ratanshaw Mehta** (226), **Commodore John Thomas Goslin**

WITH THE COMPLIMENT OF

AJIT METAL CORPORATION

KANSARA CHAWL, KALBADEVI ROAD, BOMBAY-2
PHONE. OFFICE 321716—RESIDENCE—374109.

WHOLE-SALE & RETAIL DEALERS IN ALUM, SHEETS, WIRE, RODS, PIPE, CHANNELS, PATTI, RIVETS & ALL TYPES OF EXTRUSION ALSO AVAILABLE "ALUCOIN" INDAL & HINDALCO PRODUCTS FROM READY STOCKS.

Pereira (526), Rear Admiral Vasudeva Anant Kamath (527), Air Force, Air Commodore Randhir Singh (529), Group Captain Malcolm Shirley Dundas Woollen (529), Air Marshal Hirendra Nath Chatterjee (529), Group Captain Peter Maynard Wilson (530), Group Captain Chandra Kant Vishwanath Gole (530), Air Vice Marshal Maurice Barker (530), Air Vice Marshal Satya Pal Shahi (531), Air Vice Marshal Charandas Gurudas Devasher (531), Air Commodore John Francis Lazaro (532), Air Vice Marshal Deviah Subia (532), Border Security Force (533), Ati Vishisht Seva Medal (533), Vishisht Seva Medal (535), Sena Medal (Army) (539), Border Security Force (544), Nao Sena Medal (546), Vayu Sena Medal (547).

CHAPTER XV

INDIAN ARMED FORCES...ORGANISATION AND ADMINISTRATION (549), Ministry of Defence (549), Defence Committees (551), Inter-Service Organisations (553), Office of the Chief Administrative Officer (553), Directorate General of Armed Forces Medical Services (553), Directorate of Public Relations (553), Armed Forces Films and Photo Section (555), Armed Forces Historical Section (557), Military Lands and Cantonment Directorate (557), School of Foreign Languages (559), Indian Soldiers, Sailors and Airmen's Board (559), Directorate General of Resettlement (561), Services Sports Control Board (565), Army Headquarters (567), Branches and Directorates Under Each (567), Static Commands (568), Manpower strength and organisation (568A), Arms and services (568A) Recruitment Training etc (568B) Naval Headquarters (571), Naval Plan...1948 (571), Expansion of the Fleet (571), Naval Headquarters (573), Branches and Directorates Under Each (573) Administrative Authorities (574), Ships and Manpower Strength (574), Ships in the Indian Navy (575), Training Facilities (577), Air Headquarters (579), Independence and After (579), Air Headquarters (580), Commands (581), Operational Strength (581), Training Facilities (583). Defence Production (585). Directorate General of Ordnance Factories (585), Research & Development Organisation (589); Directorate General of Inspection (592); Directorate of Standardisation (523); Directorate of Technical Development & Production (Air) 593, Public Sector Undertakings (595) Mazagon Dock Ltd. (592), Garden Reach Workshop Ltd. (601); Praga Tools Ltd (599). Bharat Earth Movers Ltd. (603) Goa Shipyard Ltd. (605); Bharat Dynamics Ltd. (606); Department of Defence supplies (607).

WE HAD TO COIN A NEW WORD

TO many our name is synonymous with dairy plant and equipment. Some identify us with the beverage, brewery and other food processing equipment. Many others know us as experts on refrigeration, fluid transfer, centrifugal separation and heat transfer. They of course don't forget our long association with mining equipment and accessories.

WE at Vulcan-Laval identify this diversity of our product range and expertise with one speciality ... a capability in engineering ... with a bit of applied imagination. Where a mix of engineering and imagination are required, there we are at work. We call it 'Imagineering'-our new management concept.

VULCAN-LAVAL LIMITED

P. O. Box 735, Bombay
P. O. Box 627, New Delhi
P. O. Box 710, Madras
P. O. Box 53, Poona.

VULCAN-LAVAL

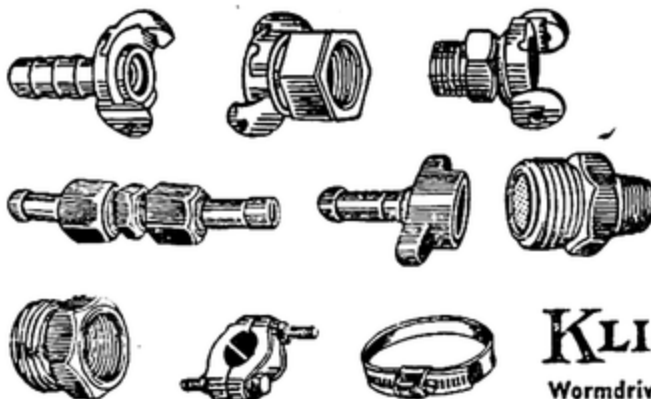
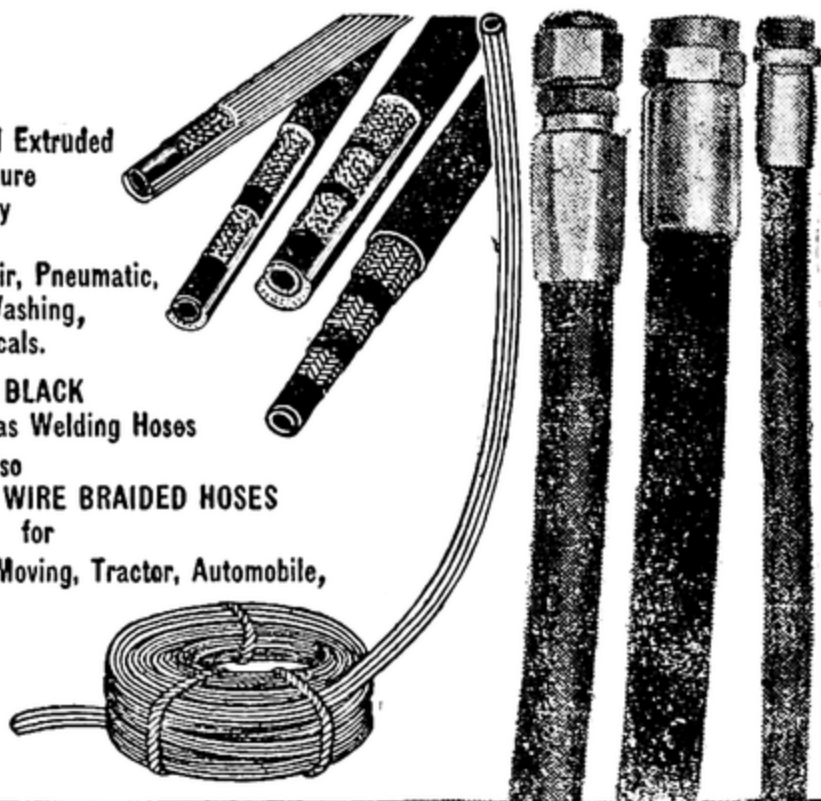


Long Length Lead Extruded
High & Low Pressure
Guaranteed quality
Rubber Hoses for
Garden, Water, Air, Pneumatic,
Rock Drill, Car-Washing,
Steam, Oil, Chemicals.

RED & BLACK
Oxy/Acetylene Gas Welding Hoses

Also
HIGH PRESSURE WIRE BRAIDED HOSES
for

Hydraulic, Earth Moving, Tractor, Automobile,
Fork Lifts, Etc:



for
All Types of Hose fittings
Forged Steel & Gun Metal, Snap-
on Airhose Couplings, R. D.
Coupling-Connector-male &
Female Couplings Etc.

KLIPCO

Wormdrive Hose Clips & Clamps



J. ROSALES PVT. LIMITED

Regd. Office: 62, Nagdevi Street, Bombay-3
Phone: 337797 Gram: 'SNAPON'

OUR STOCKISTS

VIKRAM & COMPANY

258, NAGDEVI STREET, BOMBAY-3. • 322981 — 326175

INDEX TO ADVERTISERS

PARTY	PAGE	PARTY	PAGE
A		C	
Abdeallys, Bombay	513	Camelin Private Ltd., Bombay	234
Abdulkadar Moosabhoy, Bombay	162	Castle Mills, Bombay	69
Abrawheel Pvt. Ltd., Bombay	601	Castrol Ltd., Bombay	187
Adair Dutt & Co., (India) Pvt. Ltd., Bombay	453	Central Bank of India, Bombay	565
Adamji Lookmanji & Co., Bombay	532	Chandras Chemical Enterprises Pvt. Ltd., Bombay	14
Adam's Apparels, Bombay	552	Chandrodaya Electric Co., Bombay	600
Aemphico Engineering Works, Bombay	21	Chinubhai Kalidas & Bros., Bombay	74
Ahmed Oomarbhoj, Bombay	13	Chemical International, Bombay	78
Ajit Metal Corporation, Bombay	6	Chandra Industries, Bombay	418
Alkan Insulation Company, Bombay	560	CO2 FYR Fyter Co., Bombay	437
Aldowiet Engineering Co., Bombay	594	Combine Ball Bearing Centre, Bombay	106
Allied Aluminium, Bombay	272	Coir Board, Kerala	438
Alumilite Pvt. Ltd., Bombay	558	Crooks Interfran Ltd., Bombay	
Aluminium Rolling and Spinning Mills (P) Ltd., Bombay	482	Crown Engineering Co., Bombay	
Amco Bearing Corporation, Bombay	310		
Ansons Electro Mechanical Works, Bombay	223	D	
Aasha Engineers, Bombay	112	Daudbhoy M. Tayebali, Bombay	540
Associated Commercial Mfg. Enterprises (P) Ltd., Bombay	482	D. B. Shah & Brothers, Calcutta	93
Atco Pharma Laboratories, Bombay	2	Deki and Mank, Bombay	281
Auto Industrial Paints Corporation, Bombay	318	Dhiraj Steel Co., Bombay	250
Automobile & Agricultural Industries Corporation, Bombay	566	Dhootapapeshwar Industries Ltd., Bombay	104
Automobile & Engineering Works, Bombay	124	Diwan Brothers, Bombay	460
		D. Karmali & Co., Bombay	358
		Dossa Harjee, Bombay	476
B		E	
Bakshi Ghura & Co., Bombay	284	Electric Controls Co., Bombay	425
Bakelite Hylam Ltd., Bombay	202	El-Dee Industries, Bombay	505
Balkrishna Pen and Plastic Industries, Bombay	137	Emkay Weighing Equipments, Bombay	586
Bank of Baroda, Bombay	428	Emmes Metals Pvt. Ltd., Bombay	329
Bank of India, Bombay	495	Empress Welding and Repairing Works, Bombay	280
Banegar Bros. Engineering Works, Bombay	62	Engineering Development Corporation, Bombay	603
Bata Shoe Company Pvt. Ltd., Calcutta	368	Epsilon Engineering Co., Bombay	VIII
B. C. Buhariwala & Sons, Bombay	348	E. S. Patanwala, Bombay	70
B. K. Paper Mills Pvt. Ltd., Bombay	596	Excell Industries Ltd., Bombay	
B. P. Steel Industries, Bombay	527		
Bearing Sales Corporation, Bombay	590	F	
Bearingage Corporation, Bombay	121	Favourite Book Cloth and Paper Mart, Bombay	578
Bharat Dynamics Ltd., Hyderabad	418	Filfabs (India) Corporation, Bombay	583
Bharat Industrial Works, Bombay	444	Finilex Sales Corporation, Bombay	
Bharat Engineering Works, Bombay	416	Furnace & Foundry Equipment Co., Bombay	488
Bhagmal & Son	296	Furnace Manufacturing Co., Bombay	
Bhalaria Brothers, Bombay	214		
Bharat Radiators Pvt. Ltd., Bombay	318		
Bharat Insulation Co., Bombay	2nd Cover		
Bharat Tube Corporation, Bombay	135		
Bina Silk Mills, Bombay	448		
Bombay Metal and Steel Syndicate, Bombay	74		
Bombay Paints and Allied Products Ltd., Bombay			
Bombay Registered Pipe Dealers Syndicated Private Ltd., Bombay			
Bombay Scientific Glass Works, Bombay			
		G	
		Geep Flashlight Industries Ltd., Allahabad	224
		General Spares Industries (P) Ltd., Bombay	298
		Government of Bihar, Patna	94
		Government of Gujarat, Gandhinagar	18

PARTY	PAGE	PARTY	PAGE
Government Electric Factory, Bangalore	374	Kohinoor Electro Gilders, Bombay ..	260
Government of Jammu and Kashmir, Srinagar	2	Kirloskar Electric Co. Ltd., Bangalore ..	126
Government of Orissa, Bhubaneshwar ..	456	Krishna Steel Industries Pvt. Ltd., Bombay	156
Government of Uttar Pradesh, Lucknow	28	Kussum Engineering, Bombay	609
Gold Soap Company, Bombay	120	K. Worah & Co. Pvt. Ltd., Bombay ..	228
Greaves Cotton & Co. Ltd., Bangalore ..	122		
Grindwell Abrasives Ltd., Bombay ..	160		
Gujrat Polythene Industries, Bombay ..	576		
		L	
H		Lathia Rubber Mfg. Co. Pvt. Ltd., Bombay	488
Harsha Tankers and Shipping Agency, Bombay	IV Cover	Laxmi Steel Co., Bombay	X
Hemansu Traders, Bombay	4	Leather Cloth Processors and Printers, Bombay	102
Hico Products Pvt. Ltd., Bombay	150	Lucas-TVS Ltd., Madras	188
Hemani Brothers, Bombay	196	Lumala Industries Pvt. Ltd., Bombay ..	524
Hindustan Transmission Products, Bombay	306	Luna Bearings, Bombay	590
Hindustan Hosiery Mills, Bombay	364	Lyka Laboratories, Bombay	528
Hind Rectifiers Ltd., Bombay	1		
Hirji & Co Pvt. Ltd.,	336		
Hirji Pestonji (Soonawalla), Bombay ..	90	M	
Hubs and Drums (Pvt.) Ltd., Bombay ..	80	Mac Laboratories Pvt. Ltd., Bombay ..	378
		Madhav Capacitators Pvt. Ltd., Bombay	196
I		Madhu and Usha, Bombay	368
Indian Aluminium Co. Ltd., Calcutta ..	170	Mahindra and Mahindra Ltd., Bombay	XVI
Indian Co. Pvt. Ltd., Bombay	184	Maharashtra Steel Rolling and Engineering Works, Bombay	388
Industrial Engineering Works, Bombay	159	Malabar Chemical Co., Palghat	
Industrial Abrasive Co-operative Society Ltd., Bombay	506	Mangalore Ganesh Beedi Works, Mysore	8
Industrial Traders, Bombay	576	Maneklal & Sons, Bombay	282
Indian Oil Corporation Ltd., Bombay ..	180	Mazagon Dock Ltd., Bombay	276
Indian Telephone Industries Ltd., Bangalore	144	Merchant Brothers & Co., Bombay ..	304
Indian Technical Education Society, Bombay	384	M. Bhatt & Co., Bombay	406
International Impex Corporation, Bombay	334	Metropolitan Springs Pvt. Ltd., Bombay	274
International Plastic Corporation, Bombay	116	Metonic Industries, Bombay	520
International Shipwrights, Bombay	570	M. Framroze & Co., Bombay	558
Italab Pvt. Ltd., Bombay	82	Milan Tube Tools Corporation, Bombay	277
Itlab Engineering Pvt. Ltd., Bombay ..	14	Military Holdall Centre, Bombay	554
		M. Mahasukhlal & Co., Bombay	322
J		Modern Battery and Auto Corporation, Bombay	596
Jai Hind Rubber Products Pvt. Ltd., Bombay	116	Mody Industries (FC) Pvt. Ltd., Bombay	36
Jay Automobile Engineering, Bombay ..	574	Mohanlal Harjivandas, Bombay	342
Jay Engineering Works Ltd., Calcutta ..3rd Cover	464	Monarch Engineering Works, Bombay ..	326
Janak Manufacturing Works, Bombay ..	152	MSCO Pvt. Ltd., Bombay	338
Jayant Oil Products Pvt. Ltd., Bombay ..	588	Mysore Government Soap Factory, Bangalore	28
Jindal Aluminium (Pvt.) Ltd., Delhi ..	130	Mysore State Industrial and Development Corporation Ltd. Bangalore ..	22
J. M. Trading Corporation, Bombay	8		
J. Rosales Pvt. Ltd., Bombay	407		
J. T. Jagtiani, Bombay		N	
K		Nagardas Kanji Shah, Bombay	168
Kakubhai Govinji, Bombay	233	Nagjibhai Tidabhai & Co., Bombay ..	524
Kamani Oil Mills, Bombay	266	Nagpal Ambadi, Bombay	VI
Kantilal Chunilal & Sons, Bombay	12	Narotamdas Kavalbhai Shah, Bombay ..	472
Kanji Narayan & Co. Bombay	545	National Torch and Tube, Bombay	310
Karia Brothers, Bombay	129	Natural Gas Co. Pvt. Ltd., Bombay ..	
Kewal Raj & Co. Pvt. Ltd., Bombay ..	342	Natvar Parikh & Co. Pvt. Ltd., Bombay	352
Khadi and Village Industries Commission, Bombay		Navbharat Electrical Industries, Bombay	16
		Navbharat Potteries Pvt. Ltd., Bombay	
		Navnit Stainless Steel Corporation, Bombay	548
		Neeru Silk Mills, Bombay	322
		New Age Industries, Gujarat	295
		New India Mosaic And Marble Co. Pvt. Ltd., Bombay	312

PARTY	PAGE	PARTY	PAGE
Nikhil Traders, Bombay	416	Sunco Enterprises, Bombay	582
Nirlon Synthetic Fibres and Chemicals Ltd., Bombay	174	Surendra Trading Co., Bombay	179
O		Swifts Private Ltd., Bombay	496
Ogale Glass Works Ltd., Satara	32	Swastik Paper Industries, Bombay	586
Orient Ship Agency Pvt. Ltd., Bombay	427	Swastika Industries, Bombay	444
Orissa Textile Mills Ltd., Calcutta	111	T	
Oxy-Chloride Flooring Products Ltd., Bombay	44	T. Maneklal Manufacturing Co. Ltd., Bombay	23
P		Tata Engineering and Locomotive Co. Ltd., Bombay	242
Pai Motor Co., Bombay	542	Tata Services Pvt. Ltd.,	XIV
Panchshila Engineering Co., Bombay	348	The ARC Brazier Pvt. Ltd., Bombay	398
Paragon Textile Mills, Bombay	132	The Bombay Registered Pipe Dealers Syndicate Pvt. Ltd., Bombay	556
Pearl Metal Works, Bombay	86	The Eastern Bunkerers Ltd., Bombay	247
P. Fida Husein & Co., Bombay	600	The Gaekwar Mills Ltd., Bombay	82
Pharm-Chem Distributors, Bombay	288	The General Tubes (Pvt.) Ltd., Bombay	266
Phenoweld Polymer Pvt. Ltd., Bombay	550	The Indian Cable Co. Ltd., Calcutta	217
Philips India Ltd., Bombay	XII	The Mogul Line Ltd., Bombay	408
Piyush Automobiles, Bombay	538	The Maharashtra State Co-operative Bank Ltd., Bombay	38
P. Khabardar Electrical Works, Bombay	XVIII	The Malabar Chemicals Ltd., Kerala	16
Prakash Auto Industries, Bombay	534	The Merchant Steam Navigation Co. Pvt. Ltd., Bombay	454
Prakash Auto Agency, Bombay	547	The Natural Gas Co. Pvt. Ltd., Bombay	438
Precision Industries, Bombay	6	The Ripon Road Iron Foundry, Bombay	572
P. V. Bright Steel Corporation, Bombay	604	The Ruby Mills Ltd., Bombay	60
Power Cables Pvt. Ltd., Bombay	138	The India Steam Navigation Co. Ltd., Bombay	256
R		The Shipping Corporation of India Ltd., Bombay	IV
Rabhuvanshi Mills Ltd., Bombay		The SKF Ball Bearing Co. Pvt. Ltd., Bombay	166
Rainbow Ink and Varnish Co., Bombay	450	The Standard Pipes & Fittings Co., Bombay	558
Rajen Electric Co., Bombay	392	The Mysore Paper Mills Ltd., Bangalore	50
Rajnikant & Co., Bombay	54	The Swadeshi Chemicals Pvt. Ltd., Bombay	204
Ramon & Damm Ltd., Bombay	506	Tools & Components Combine Pvt. Ltd.,	79
Ramson's Rubber Products, Bombay	260	Trivandrum Rubber Works Ltd., Kerala	240
Ravinira Heraeus Ltd., Bombay	384	U	
Ravindra Commercial Co., Bombay	II	Uday Trading Corporation, Bombay	374
Regal Battery Corporation, Bombay	582	Unichem Laboratories Ltd., Bombay	172
Rescon Manufacturing Co. Pvt. Ltd., Bombay	335	Union Bearing Mfg. Co., Porbandar	6
R. Ochhavlal & Co., Bombay	243	Universal Engineering Stores, Bombay	538
Rockhard Fire Engineers, Bombay2nd Cover	Upper India Trading Co. Pvt. Ltd., Bombay	584
Rolux Trading Co., Bombay	155	V	
Royal Car Decorators, Bombay		Veenus Agencies, Bombay	270
S		Victory Flask Co. Pvt. Ltd., Bombay	496
Sanghavi Scientific Corporation, Bombay	287	Vidyut Cable and Rubber Industries, Bombay	405
Savita Chemicals Pvt. Ltd., Bombay	54	Vulcan-Laval Ltd., Bombay	7
Semiconductors Ltd., Poona	248	W	
Shanti Trading Corporation, Bombay	392	Water-proof Corporation Pvt. Ltd., Bombay	90
Shah Engineering and Equipment Co., Bombay	500	Wyeth Laboratories Ltd., Bombay	176
Shaw Wallace & Co. Ltd., Bombay		Z	
Shroff Automobiles, Bombay	352	Zandu Pharmaceuticals Works Ltd., Bombay	410
Silica Ware Pvt. Ltd., Bombay	608	Zenith Tin Works Pvt. Ltd., Bombay	50
S. M. Shah & Co., Bombay	523		
Steam Radiators Corporation, Bombay	85		
Standard Pipes and Fittings, Bombay	556		
Steel Industries of Hindustan Pvt. Ltd., Bombay	542		
Steel and Roof Constructions, Bombay			
Staple Pins Pvt. Ltd., Bombay			
Suuder Auto Engineers Pvt. Ltd., Bombay			

**PERSONALITY BUILD-UP IS
.....OUR SOLE BUSINESS.**

●
**FOR FIFTY LONG YEARS
WE HAVE PUT YOUNG MEN
IN SUCH SHIRTS AS HAVE
MEANT THREE-FOURTH OF
THEIR PERSONALITY**

●
**ARMED FORCES NEED MEN
WHO MUST NOT FAIL TO IMPRESS
WE PROVIDE THE MAIN ELEMENT
....THE SHIRTS THAT MAKE THE MAN**

●
KANJI NARAYAN & COMPANY

(SOLE PROP. LALJI NARAYAN)

17-A, COWASJI PATEL STREET, BOMBAY I.

Phone : 256334

**MASTERS OF SHIRTS
WHOM THE PEOPLE KNOW
AND WHOM YOU MUST KNOW.**

Editorial

THE VICTORY

DESPITE all the efforts to the contrary, history of mankind has been punctuated by wars. Despite all the limitations sought to be placed on terror weapons, each war waged has been of greater extent and intensity. Despite all the devotion and dedication to peace and philosophies of peace, India has been no exception to this general rule of mass murder to seek political decisions. Whatever may be said to the contrary, the War of Mahabharat stands out as the most savage of the ancient times and the War of Kalinga that of the medieval times.

It is indeed an irony of fate and tyranny of nature that few wars in history have been decisive. True it is that, in all wars, there has been a victor and a vanquished. However, all these victories have been barren. It has been because despite the facts of victories and defeats, the causes and sources of wars have continued to exist and persist. The world military history has had to wait for several thousands of years to witness a war in which victory was complete and decisive... the war for the liberation of their country waged by the people of **Bangla Desh** in alliance with India.

THE sources and causes of the war, which was to give an entirely new turning to the very objectives of war, lay in the diseased physical structure and body politic of Pakistan. Despite its proclaimed devotion and dedication to the philosophies, principles and practices of Islam, there was nothing Islamic in it. Ruled by a military junta, it stood out as the very negation and antithesis of 'Musavat Mohammadi' or Islamic concept of democracy and socialism. Besides, whatever roots in the hearts and minds of people that the Government could claim to have in the Western Wing, it had nothing of the sort in the Eastern Wing. Treated as inferior humanity, even within the framework of Pakistani concept of Islamic democracy, the people in the Eastern Wing were all the time seething with discontent. If the general elections... the very first held in the entire history of Pakistan, could be taken as any index to peoples' loyalty to a country... the people of the Eastern Wing had demonstrated clearly and categorically that they were no longer a part of Pakistan as it existed then and as it was struggling to exist in future.

POLITCO-military wisdom and sagacity should have dictated the ruling military junta of Pakistan to accept the realities and move to save the country from utter and absolute ruin. Unfortunately, the ruling junta took the wholly opposite stand. It moved to crush and kill the people's will with the use of brute force. As was very natural, the use of brute force on the unarmed civilians, mass killings, mass rape of women, unprecedented movement of people across the frontiers as refugees, further ironed the determination of the people in the Eastern Wing to wage the struggle to final victory. It also found for them world wide sympathy and ultimately the active alliance of world's largest democracy... **INDIA**.

FORCED by the politico-economic problems caused by the presence of as many as ten million refugees on the Indian soil and dictated by the supreme desire of saving democracy's demise at the hands of a handful of militarists ruling Pakistan, the Government of India accepted the offer of alliance with the Government of Bangla Desh (in exile at that time but having its roots in the heart of every man and woman in the interior of that country) and undertook to move armed forces to seek and secure a final and decisive victory for the people of Bangla Desh and provide the ground work for similar victory for all other people fighting for freedom and democracy.

THE military junta of Pakistan had earlier accused India of wholly unwanted and unwarranted intervention in the internal affairs of that country and using the discontent in the Eastern region as a pretext for a massive military aggression. In order to allay all such fears the Government of India declared that it never had, and it would never have any intention of holding any part of the Pakistani territory. The armed forces of India would move into action only to help the people of Bangla Desh to realise their dream of national freedom and democratic way of life. Once this was done, not a single Indian soldier would be found on the soil of free Bangla Desh. The same would be the case in the case forces of the Western Wing of the military rulers would not decide upon the continuation of hostilities.

FOR several years after the birth of Pakistan the military junta in that country had claimed that their armed forces were the finest on the Asian continent and when, committed to battle, they will render their account as such. On several occasions earlier, the military junta of Pakistan had threatened that, should India provoke a military contest, the armed forces of Pakistan would wage the decisive battles in and around Delhi. India had no cause to be deterred or cowed down by these claims and threats. India had the clear and categorical advantages of well defined political objectives, accepted and endorsed by the masses of the people. India also had the advantages of the body of armed forces, drawn from all sections of the Indian community and saturated in the same political objectives. Inferior in the matter of quality of military hardware though, Indian armed forces had the clear and categorical advantages of

WITH OUR
WARMEST
GREETINGS
TO

ALL OFFICERS AND MEN
OF OUR
GALLANT ARMED FORCES
AND
AUXILIARY ARMS

PHONE
OFFICE
258019

RESIDENCE
214461
356718

**ITALAB ENGINEERING
PRIVATE LIMITED**

OFF ABAN HOUSE—ROPEWALK STREET
BOMBAY-I.

SERVICE TO THE SOLDIER SONS IS THE TRUE SERVICE TO THE COUNTRY

WITH OUR
WARMEST
GREETINGS TO

ALL OFFICERS
AND MEN OF OUR
GALLANT ARMED
FORCES

**CHANDRODAYA
ELECTRIC CO.**

BHANGWADI, KALBADEVI ROAD-BOMBAY-2

PHONE
312579
RESIDENCE
361502

Distributors of

"CTL" CONDUIT PIPES, "SENTINEL" SWITCHGEARS

STOCKISTS OF

ALL ELECTRICAL ACCESSORIES

the most competent officer cadre, indefinitely superior motivation, morale, training and esprit de corps. Their greatest advantage were the masses of their own people and the people of Bangla Desh solidly behind them. The former could provide all the security of the rear and the latter could easily act as the eyes and ears, render the areas soft and vulnerable and provide all the logistic support elements needed.

ON several occasions earlier, the military junta of Pakistan had threatened that in the event of a military contest with India, they would not be alone. Even on the eve of their aggression against India, they declared that 'their friends would move.' It may be said that for the purposes of greater security, India moved and secured the alliance with Soviet Union. However, the Government of India, at no stage, hinted even most remotely, that they would have Soviet troops to wage their battles. On the contrary, the Government of India maintained its robust faith and confidence that the ultimate victory in the contest would be won by the people of Bangla Desh themselves and the participation of the Indian armed forces would be only temporary and in support. There would be no cause for outside intervention because no country on earth, howsoever reactionary, would like the people being denied of their essential and inalienable right to freedom and democracy.

THE so called Indo-Pakistani war, on which so much was staked by Pakistan and on account of which prophets of doom had raised such wide-spread fears on its extent, intensity, duration and destructive potential, lasted for mere seventeen days. Right from the outset, it demonstrated utter and absolute superiority of Indian command capabilities and their concepts of strategy and tactics. It also demonstrated rare and unique Indian skill in successfully combining all other elements of war, particularly the morale, motivation and determination of the people of Bangla Desh, their regular and irregular warfare capabilities and their knowledge of terrain and disposition and deployment of the enemy armed forces, and use them all to win the victory in the shortest time and with the very minimum loss to human life, and property, possible under the circumstances. The war could not prove of the dreaded destructive potential because the enemy air forces were driven out of their own skies within the first three days and their naval forces were completely mauled and crippled in the very first assaults. Their land forces were put on the defensive and an retreat from the very day of the outbreak of hostilities. Surprise and mobility of the India-Bangla Forces, coupled with their encircling and enveloping tactics did not permit any major and massive pitched battles. The result of this was that as many as 93,000 enemy troops, the largest known to recent military history, surrendered in the East and Indian troops were several miles deep in various sectors in the west, the very military heart of Pakistan, when the unilateral cease-fire declared by India was accepted by what had remained of Pakistan.

NEVER in history wars had been judged not from their extent, intensity, duration and destructive potentialities. On the contrary they had always been judged from the real and tangible results within the framework of political objectives. No war in history earlier, not even the two world wars, had shown more positive results than the war for the liberation of Bangla Desh. The victory to the Indo-Bangla armed forces was complete and absolute to the extent that: (a) It established that the will of the people could no longer be crushed and killed by the use of brute force. This was evidenced by the emergence of the sovereign Republic of Bangla Desh. (b) Contrary to all expectations, but in conformity with the earlier declarations, India declared that not a single Indian soldier will remain on the Bangla soil a minute more than would be actually required by the Government of Bangla Desh for the purposes of the restoration of law and order. This was not a mere declaration, because the actual withdrawal was completed much ahead of the schedule. With immediate effect it exploded the myth of India's imperialist or aggressive designs and of any intention to hold any territory beyond her own territorial limits. (d) Perhaps the most significant development in the wake of victory was the emergence of Zulfikar Ali Bhutto, the leader of the Peoples' Party, who immediately on taking over as the President of Pakistan, declared a democratic constitution, democratic government and democratic way of life for the people of that country, as his very first objective and (e) Finally there was the emergence of strong and irresistible forces in all the three countries concentrated on winning durable peace on the sub-continent.

FOR this victory, which emerged to be complete and absolute, which gave reality to the very meaning and purpose of war, if at all it had to be waged the people of Bangla Desh deserved to be congratulated the very first. Then came the operating Indian forces who used force to the very minimum possible under the circumstances and who withdrew in the most disciplined and orderly manner, once the political objective was achieved. The last, though no less important, came the people of Pakistan under the new leadership, who conceded that freedom and democracy was the essential and inalienable right of all people and the only system which could permit the individual add national genius to develop and play its rightful role in their orderly progress.

WE congratulate them all. Should the spirit of the War of Bangla Desh survive and remain dominant in the minds of the people, there will never be another war and, therefore, no hinderance to the orderly progress of mankind.



**meet the
challenge!!**



LIPIDEX

Meet the challenge of fashion; the challenge of unwanted fat at undesirable points, and the demand of health, the simple comprehensive way with **LIPIDEX**

The capsule that packs ancient wisdom in modern idiom.

LIPIDEX, a compound of well-tried basic, ayurvedic medicines, burns fat away, the easy harmless way.

Reduces extra Weight by 2 to 4 kgs. a month; reduces waistline by two to four inches in six weeks.

Get rid of that ugly bulge in the middle; trim away your waist; acquire curves that compel admiration.

All this within weeks and with no dieting or other regimen.

And most important: **LIPIDEX** tones up your health; puts pep and vigour into you.

Give yourself a new figure and new life with LIPIDEX.



Malabar Chemicals Company

Post Box No. 25 Palghat-1, Kerala.

CHAPTER I

MODERN WARS

.... MEANING AND PURPOSE

.... POSSIBILITIES AND PROBABILITIES

WARS have never been to the taste of mankind and yet the story of mankind has been warfare of increasing extent, intensity, lethality and totality. No wars have been just and yet there has not been a war which has not been justified by the belligerents with equal vehemence from their own respective view point. Wars have generally been massive losses in terms of human lives and property. Wars have also meant untold sufferings, miseries and privations to the survivors in both the victor and vanquished countries. However, there has not been any retreat from the path of war. In our time, there has been an unprecedented effort to ban and outlaw war. A host of world organisations, including the United Nations, have been committed to this task. However, despite this massive effort at the global level, wars have continued to occur, spilling into newer and newer areas and taking newer and newer shape and form. Even after the close of World War II, there have occurred several wars. . . . wars of position and movement and wars of protracted struggle and delayed decisions . . . the guerrilla wars. The strategy of indirect approach has also found greater employment in our time than ever before and this has been more provocative than deterrent to war. It may not sound pleasant and palatable to those committed to the creation of the Utopia of Peace, but it has to be conceded that factors governing the conduct of sovereign nations, as they are, wars will continue to occur and threats of wars will continue to exist and persist. Under the circumstances, the need to understand fully the growing complexities of modern wars has become infinitely more important than ever before, particularly the "whys and hows" of them and the presence of force and vulnerabilities.

JAMMU & KASHMIR AT A GLANCE

1. **JAMMU & KASHMIR ABOUNDS** in perhaps the most beautiful spots of scenic splendour & tourist attraction in the entire country. Kashmir has been acclaimed as a paradise on earth and offers opportunities for the lovers of nature, for savants and seekers after spiritual peace, for trekkers, mountaineers and holiday makers, anglers and game hunters.
 2. **THE NUMBER OF TOURISTS** visiting the State has been steadily increasing with the the expansion in amenities being provided to them. While in 1965-66, 43,000 tourists visited Kashmir Valley and 1,80,000 came to Vaishnodevi in Jammu, the corresponding figure for the year ending 1969 were 1,07,000 and 2,74,000 respectively.
 3. **PLANS FOR DEVELOPING** the tourist resorts of Gulmarg, which offers unique opportunities for winter sports, are already under way.
 4. **JAMMU & KASHMIR IS ALSO KNOWN, THE WORLD OVER, FOR ITS HANDICRAFTS, ITS SILK AND ITS FRUIT.**
 5. **INVESTMENT** made from the beginning of the First Five Year Plan upto 1970-71 is Rs. 203.81 crores. The total outlay in the Fourth Plan is expected to be Rs. 158.40 crores.
 6. **THE PER CAPITA INCOME** (on 1955-56 prices) rose from Rs. 188/- in 1950-51 to Rs. 299/- in 1968-69.
 7. **ALTHOUGH IN THE INDUSTRIAL FIELD,** the State has suffered due to its age-old backwardness, its landlocked geography and poor communications, special efforts have been made to expand this sector. During the last two years, 90 small industrial units were established. In the public sector industries, the production rose from Rs. 196 lakhs in 1964-65 to Rs. 296 lakhs in 1969-70. Several new industrial units involving a capital outlay of about Rs. 60 crores, are conceived in the public sector as well as in the private sector. Government have recently sanctioned a package scheme of incentives to attract investment of entrepreneurs for the establishment of industries in the State for the development and expansion of handicrafts special steps are under way.
 8. **IN THE PLAN PERIOD** upto the end of 1989-69, about 1,11,000 acres of additional land have been brought under irrigation. The production of food-grains arose steadily with the increasing use of fertilizers and high yielding seeds. The addition in foodgrains in 1969-70 was 909 lakh quintals.
 9. **THE AREA UNDER HORTICULTURE** expanded from 56,000 acres in 1964-65 to 1,00,000 acres in 1969-70. Fruit export increased from about 3.39 lakh quintals in 1966 to 7.36 lakh quintals in 1969-70.
 10. **PRODUCTION OF ELECTRIC POWER** increased from 4 MWS in 1951 to 40.35 MWS in 1960-70. Several power projects are now in hand; additional power of 36 MWS is expected during 1971; 21 MWS more in 1973 and about 366 MWS still more by about 1976. Arrangements and plans are under way to fulfil the more urgent demands for power, meanwhile by diesel generating sets.
- There are at present 876 doctors in the State, against only 123 in 1947. The life expectancy in 1947 was 32 years; at present it is 50 years. Per capita expenditure on health has risen from 47 paise in 1947 to Rs. 9.30 at present.
 - Jammu & Kashmir is perhaps one of the few States in the country where education is free right from the Kindergarten class to the post-graduate standard. About 87.30% of boys and 30.76% of girls in the age group of 6-11 are at present in schools.

Issued by:

Directorate of Information.
Government. Jammu & Kashmir

WARS. . . THE CAUSES :—Throughout the period of history, wars have been politics with force of arms. They have been the ultimate instruments of policy in pursuit of national objectives. In the ultimate analysis, wars have been used by sovereign states as tool of international politics. . . . by insurgents to gain independence, by government to quell revolts and by international organisations to suppress aggression. Since wars have always been key tool of statecraft in the world of competing sovereign states, the preparations for wars, violence and conflict below the level of war, have always arisen out of relations between sovereign states. The aims of wars have been as varied as their causes. Sometimes territorial aggrandisement has been the main aim. On other occasions, the aims have been search for economic hegemony, stability or search for national self, determination. The problem of war has never been just a problem of military strategy, but broadly the problem of combining military power with diplomacy and economic and psychological instruments of power within a coherent national (group) strategy, that is capable of supporting national (group) political objective (s).

MODERN WARS. . . BEGINNINGS :—In a way and to an extent, all wars in history have been modern. It is because, in every war, the warring nations have committed to the field of battle their very best in trained manpower, economic resources, weapons systems, technical skill, moral and directional capabilities. However, according as the stages of history and phases of human civilisation, wars have been divided into ancient, medieval and modern. Modern wars in the meaning and purpose that are seen and understood today, are claimed to have begun with the discovery of gun powder and its uses to fire projectiles. With the discovery of gun powder, it has been claimed, war took its first momentous steps towards technology, lethality and totality. It was gun powder and the intensive research into what it could be made to do that fostered the habit of enquiry into scientific matters and led to a host of revolutionary innovations and inventions in quick succession. Although, **Sultan Mohammad II of Turkey** has since been recognised as the first great gunner in history, the honour of being the first great modern military commander has gone to **King Gustavus Adolphus of Sweden**. There have of course been many after the king to bring about further revolutionary advances in the art and practice of war, but his name has continued to shine in its original glory as the founding father of modern warfare.

TOWARDS UNDERSTANDING WAR :—Even in the earliest times, the art and practice of war was recognised as more difficult and delicate than any other art or science, in as much as it concerned the existence of countries and lives of multitudes of people. Even in those remote times, it was generally conceded that the real nature and character of war, or the threat of war, could not be clearly understood without a thorough grasp of the key factors which governed the relations between sovereign states and the politico-military ambitions that they had. However, until about the dawn of the sixteenth century, not even those who had embraced the profession of arms, had taken any pains to study the art and practice of war, even in its organisational and functional aspects, in a systematic and scientific way. First rudimentary beginnings of this study were seen in the writings of **Marquis de Savagone** in the sixteenth century and those of **Montecuccoli** in the seventeenth century. Deeper and more serious thoughts were given to this subject towards the middle of the eighteenth century which produced such outstanding thinkers and writers as **Newton**, **Lloyd**, **Marshal de Saxe**, **Guibert**, **Bulow** and **George Benhard**. It was **Bulow** who emerged as the last interpreter of eighteenth century rationalism. It was **Bulow's** contemporary, **George von Benhard** who heralded the revolution in military thinking. This was given its first systematic and scientific shape and form by **General Antonette Henri Jomini** and **General Von Clausewitz**, who were later recognised as the co-founders of modern military thought and whose works became the staple of military education throughout the world.

MILITARY STUDIES:—Ever since their inception, military studies have remained restricted and confined to the organisational and operational aspects of war. However, they have since acquired a long and distinguished record in the numerous academic establishments and Services academies throughout the world. In the Services, military studies have for long formed an important part of the curriculum for two main reasons *i.e.*, their utility for providing objective lessons for the future conduct of operations and for the valuable means of training the judgement of the future commanders by exposing them to a multiplicity of experiences concerning the uncertainties of war. Further, military studies, by concentrating upon technical study of the art and practice of war, have been helpful to the formulation of the Principles of War. In 1802, was founded the **United States Military Academy** specifically for the scientific study of the art of war. The teachings were in the main based on Jomini's Book "**Precis of the Art of War**". In Britain, official staff histories began to appear after the Crimean War. After the Franco-Prussian War, which formed a watershed, as significant to military as it was to diplomatic history, the technical study of military history grew to enormous proportions. After 1870, however, the main currents in military thinking began to flow from Berlin. So much was the output and outflow of military literature that German military doctrine and institutions, tactics and organisations and even bits of language and uniforms were swept into other armies and deposited there. In the realm of strategy, the new German doctrine found austere expression in the Memoranda of **Helmuth Von Moltke**. To wade through the technical and theoretical literature that appeared after 1870, could easily consume the worst years of one's life. Apart and aside of the memoirs and recollections of some of the top Generals published during the period, new professional journals gave the soldiers every where an opportunity to express their views. New military schools stimulated the study of war in all its phases and gave new direction to theory and doctrine. Revised tactical manuals accompanied the ferment of discussion and tried in vain to march in step with technological change. By the turn of the century, there began to appear books on the theory of war, military policies and national strategies. There were many reasons for this new trend, not the least important was the growing cost and complexities of the new weapon systems which new scientific discoveries, allied to an expanding technology, had made available.

TOTAL WARS:—Military historians and theoreticians have since been agreed that, whatever the advances in science and technology, motivations to wars, concepts of tactics and strategy and the inter-dependence of people, war until the middle of the nineteenth century was still limited in extent, intensity and objectives. It was the American Civil War which, for the first time, introduced the concepts of war, what later came to be known as "**Total Wars**" and which brought in their wake astonishing modernity in the range of mental approaches and material innovations concerning the conduct of war. Having begun so, the war later made rapid advances towards greater totalitarian concepts. However, it was only with the dawn of the twentieth century that the war began to enter into its kingdom as the potential destroyer of mankind. This was made possible by the organisation of mankind into great states and empires. To this were added the potentialities of good finances, world wide credit and accumulations of large capital reserves, scientific and technological breakthroughs which could enable unprecedented concentration on expensive and lethal weapons systems and provide to the armies unlimited staying power on the fields of battle. The first taste of the advancing new thought on planning, organisation and execution of the enterprise of mass slaughter was provided by the first World War.

On all accounts, World War I emerged to be the most massive, most intense and most extensive, the most dreadful and the bloodiest war in entire history till then. It also became the breeding ground for a host of innovations in weapon systems and

the objective lessons in tactics and strategy, particularly the strategy of attrition. It was during this war that the weapon systems became so complicated and so costly that their manufacture could be undertaken only at the Governmental levels and this concentrated unprecedented powers in the hands of the Governments of the day. It was also during this period that the tank, the submarine and the aircraft revolutionised the striking power and the power to break through the operating forces. The new weapon systems raised the war to three dimensional levels and rendered land, sea (both on the surface and beneath) and air space above, as the areas of effective and devastating military operations. They also pointed to the significance and importance of the long range warfare and hazards of military operations to the civilian masses hundreds and thousands of miles away from the actual battle lines. Being a war of material, it gave a new orientation and new emphasis to agriculture and industries. Being dependent upon finished goods, it also pushed into unprecedented importance farms and factories and lines of supply and communications.

PHILOSOPHICAL MOTIVATIONS:—There had of course been many wars even in the era of limited wars, when philosophy of a kind was the all dictating motivation to wars. Religious wars of the medieval times could be instances, if any were needed to support the contention. However, it was the **American Civil War** which, for the first time in history, used the political philosophy of whole people as the sole motivation to war and actively associated the entire mass of people with the war effort and military operations. It was in consequence of this war that democratic ambitions of the people in all countries began to dictate policies and war objectives and pointed to the era of wars of liberation. A further significant advance to this new objective was made with the outbreak of World War I, which was claimed, by the Allies, at least as a war waged to make the world safe for democracy. However, while yet this war was on, there was born at the hands of **Karl Marx** a new philosophy which was later to give an entirely new and most revolutionary orientation to the very concept of war.....Peoples' Revolutionary Wars, which could spill into all areas and, encompass all people...solidiers in the filed of battle, workers in the factories farmers in the fields and intellectuals of all types and in all walks of life. However, while yet this philosophy was in the process of build up in Russia here was born in Germany another philosophy...Nazism which was ater lto plunge humanity into another global conflagration. Whatever has been or may be said against **Adolph Hitler**, the greatest glorifier of war, it was he who presented and projected to the German people war as the very summit of human achievements, a natural ultimate stage in man's historical development.....in fact, the very essence and content of man's individual and corporate life.....It was this concept of war which, when presented and projected to the German people, brought into existence a war machine of fanatical zeal, enthusiasm, morale and utter and absolute devotion and dedication, like the which history of mankind had not seen before. Pitted against these philosophies was the theory and practice of democracy held valid by the allies in World War I and projected to the masses of people in all countries as the only way to peace, peaceful co-existence and orderly progress of entire mankind. The entire intervening period between World War I and World War II was utilised for this triangular build up. So much was the concentration on the build up that, by the time the World War II came, the masses of people of all classes and categories in all countries were drawn into the war effort from the view point of their respective Governments. Moved by the rapid advances made by war towards unprecedented totality and lethality, **Sir Winston Churchill** said: 'War has grown most dreadfully in all dimensions and can no longer be left in hands of one class of people..... the Generals and the Admirals and those under their commands.....War has become the business of entire people and it is the entire people who can deter, wage and win the war'.

NEW STRATEGIC CONCEPTS :—Until the close of world War I, the tactical and strategical concepts of Clausewitz, or the misinterpretation thereof, dictated the military activity of all the warring nations. However, the post war period opened with intense renewed thought and activity in Germany, Britain and the Soviet Union. The United States of America had emerged from the war with unchallenged military superiority. To the Americans, therefore, their traditional concepts of war effort and tactics and strategy were still valid. Even at the close of this intervening period, there were no signs of any increasing ferment in the American military thinking. In Germany, the new thought and activity was led by **Seekt and Guderian**. At the hands of **Adolph Hitler** it was developed to its most sinister perfection. In Soviet Union, it was undertaken by **Trotsky and Tuchkhavisky**. In Britain, it was in the hands of **Captain B. H. Liddel Hart** who was later to earn the rare and unique reputation of a Captain teaching the Generals. The leaders of the new thought and activities in all these countries appeared to be provoked by the absurd spectacles of massive manoeuvres and gigantic slaughters of 1914-18 war. They had in view wars of, quicker decisions at lesser costs in terms of time, human lives and material. This was brought out most clearly by Adolph Hitler who said, 'The next war would be quite different from the last war. Infantry attacks and mass formations would be obsolete. Interlocked frontal struggles lasting by for years on petrified front will not return. The tactics and strategy in the next war would be that of eagleswift in flight, sudden in decision, and utterly ruthless in action. Long range.....deep penetrating, and all destroying lightening attacks will have lightening decisions'. Their main reliance were the scientific, technological and psychological advances which could provide to the fighting forces unprecedented

With Best

Compliments from :



Gram : 'UNIBEARING'

Telephone: 433, 339

OFFICES:

- ★ DELHI
- ★ CALCUTTA
- ★ BOMBAY



BALL & ROLLER BEARINGS

Manufacturers :

UNION BEARING MFG. CO.

PORBANDAR (GUJARAT)

MANUFACTURED IN TECHNICAL
COLLABORATION WITH

NAGASE & COMPANY LIMITED

OSAKA — JAPAN

mobility and firepower and reach far behind the actual battle zones to break the will and morale of the enemy even before the battle was joined. However, Liddel-Hart emerged to be the most vocal and most effective in his new solutions, both in the realm of mechanisation and in the rediscovery of strategy as the key to the proper understanding of war. As a non-conformist, it was he who pointed the way towards a war of manoeuvre and discovered the indirect approach as the basis of decisive strategy. As a pragmatist as well as a non-conformist, it was he who recognised the enduring potential of the defensive, the essential mode of action for achieving the decisive manoeuvre, either by means of economy of force, which alone could make possible in preparation for an offensive or by an active counter offensive manoeuvre. Although, it was adapted and put to first uses by Nazi Germany, it was he who first defined and crystallised the theory of Blitzkrieg.....the very ultimate in modern mechanised warfare and responsible for stunning German lightning victories in the opening phases of the war.

THE NUCLEAR ERA:—The development and perfection of mechanised warfare in line with the teachings of Liddel Hart and others which was witnessed during World War II emerged as a proof positive that war had grown vastly in its lethality and totality and had well earned its claim to being the massive destroyer of life on earth: Extremely dreadful as it was to the future of mankind, unfortunately this was not the finale to further advances in the murderous business of war. Towards the close of the war, there came into existence yet another weapon systems which opened an entirely new era of warfare.....the era of nuclear warfare which immediately presented to the suffering humanity the most horrible ever prospects of war being the utter and absolute destroyer of entire life on earth.

Nuclear weapons, whatever their destructive capabilities, had seen a very limited combat employment and that too against a country already exhausted and completely defenceless against the new weapons. Under the circumstances, even the best of military planners appeared to be unable to discuss the nuclear future with any appreciable amount of definite and positive objectivity. However, immediately after the close of the war, the overwhelming opinion of the military experts throughout the world was that, effective from the first drop of the atomic bombs, there had opened a new and a revolutionary era of warfare, and tactics and strategy employed till then could no longer be valid and tenable. The first reaction was the emergence into prominence of the extremists of air power like Douhet. They seemed to be suddenly substantiated by weapons of which even Douhet had not dreamt. Once again the super bombs and super bombers, ultimately maturing into rockets and missiles of inter-continental ranges, and spacecraft bringing even the stellar regions within areas of military operations, appeared to be reducing armies, navies and even industrial potential, other than directly committed to production of such bombs and delivery systems, to be mere auxiliaries, if at all they would be needed, even as such, to the Strategic Aerospace Forces. This appeared to be particularly so in the United States of America which immediately after the close of the war happened to be the sole possessor of the new weapon system and technical know how and supporting capabilities for its further development.

Until the close of World War II, wars were just wars and there was no classification, categorisation or gradation attached to them. Besides, until that time, wars were all "set piece wars". They were characterised by warning and threat, total and planned goal, speed of response and detailed and precise management of the campaigns.....wars or battles were most often rational campaigns in which the outcome of each campaign could be clearly recognised and the conduct (if not the outcome) could be predicted fairly easily. The details of war could be carried out in precise, almost elegant style. Throughout the weaponous exchange, contestants could match

MANGALORE GANESH BEEDIES

- MADE OUT OF THE
FINEST MATERIALS
- SMOKERS CANNOT
AFFORD TO MISS THEM

Daily Production Exceeds

4 CRORES BEEDIES

Head Office :

**MANGALORE GANESH
BEEDI WORKS**

VINOBA ROAD, MYSORE-5.

Phone 20241:

Grams: "AROMA"

the quotas set by war plans and war games and by the experiences gained through peace time training and exercises. In the nuclear era, however, the military theoreticians began to talk about various kinds of wars and tactics, strategy and weapon systems necessary for such wars. The wars of the future were in the first instance classified and categorised into limited, unlimited and total wars. By another definition they were placed in such groups as conventional, unconventional limited and nuclear general wars. They were also defined as high intensity wars in which the fire power was seen as essentially thermonuclear mid-intensity wars in which the fire power was visualised as conventional and politico-military objectives limited and low intensity wars in which revolutionary political aims would dominate and insurgents would bestride the battle fields. Reginald Bretnor of US has categorised wars into;

(a) Unlimited wars between superpowers, in which all the available weapons would be employed without restraint. (b) Limited wars between super powers, in which by mutual agreement, stated or unstated, no weapons of ultimate destruction would be employed. (c) Unlimited wars between second or third rate powers in which available super weapons would be used without restraint but in number inadequate to procure ultimate destruction. (d) Limited wars between such powers or between minor powers lacking such weapons and (e) Civil wars with or without outside intervention, limited by necessity and by their very nature. According to him there are practically no chances of the wars of the first category being waged. The wars of second category also seem to be highly improbable. However, wars of the third category, are a very recently developed possibility, and as there are number of powers today without a saturation capacity, such wars must at least be considered. Wars of the fourth category would also have to be considered more likely to occur. Wars of the fifth category, should probably never be called wars at all. To call them wars would dignify and legitimize them. They should be considered police actions and the military role, no matter how massive, would be that of a police auxiliary. However, for several years after the war, it was the considered opinion of all military planners that, whatever the nature and character of future wars in the initial stages, they will all have the potentialities of escalating into nuclear general wars. Actually, it was their contention that in future there would be no war without the actual use or the threat of massive use of nuclear weapons.

THE FANTASTIC GROWTH:—Immediately after the close of the war, United States of America were the sole possessor of the nuclear weapon systems and the technical know how and supporting capabilities for their further development. They were, therefore, in a position to dictate to the entire world the peace of their design and concept. Immediately after the close of the war, the nuclear weapons were considered true marvels of science and engineering and their growth and development was considered rather a slow process even in the United States of America. However, the situation began to change much earlier than expected. Soviet Union broke the monopoly claimed to be held by the United States of America and entered into the new armament race with the declared objective of attaining unquestioned superiority. Before the two decades, following the close of the war, were over, nuclear weapons, both in the United States of America and the Soviet Union, became available in plenty. Within this short period, their explosive power began to range between a mere fraction of the devices that had marked the dawn of nuclear era and those having explosive power several thousand times the original bombs. Within this short period, nuclear devices were fitted to weapons which could be carried by foot soldiers like any other infantry weapon. They were also fitted to aircraft, to ships on the high sea, to submarines beneath the surface

of the seas and rockets and missiles of inter-continental ranges. Apart and aside of this, the technological race multiplied the choices of weapons system that could be made use by the military services.

At the close of the war, there were, at the most, two or three choices available to each Service. By 1950, the number had risen to scores of different types, each with differing characteristics and implying different strategies. It was not before long that the number of choices rose to several hundreds. Since each choice further permitted a wide variety of combinations, the choices could be considered to have crossed the fantastic and the incredible limits. And yet this was not the **finale** to the technological warfare which had kept the vibrant technology unfettered for further and further breakthroughs to gain and maintain world wide superiority. A stage was reached when the new strategic thinkers warned that the nuclear weapons would not be the last to be invented by the genius of man, nor their explosive contents would be the ultimate criterion. They clearly hinted to yet another weapon system whose destructive potential would be primarily directed against climate, communication systems, human mind and human nerves.....that will paralyse life without actually killing in the old traditional manner. The only lag was that all the advances were in the matter of offensive and almost nothing in the matter of defensive. War under the circumstances did not appear to have any meaning because none could hope to survive to reap the fruits of victory.

STRANGE TURN ABOUTS :—For several years, following the close of World War II, the threat of nuclear general war was kept alive and assertive and the tensions so generated were utilised to build up massive nuclear stockpiles. It was realised that the two World Wars had been possible only because the world during the period was cut up into mighty empires. The momentous decisions could be taken in few imperial capitals and the governed countries could be pushed into the hell of war under orders. The withering of the empires in the period immediately following the close of the war caused a vacuum and hazards to global strategy in the context of a nuclear general war. It was sought to be filled up by the creation of alliances under the leadership of each power giant. In the initial stages, it was thought that the alliances would be monolithic and the allied countries would move into the field of battle without giving any consideration to their respective national interest or on account resistance incapability because no nuclear weapons or the technical know how, except that directly controlled by the power giants of the nuclear weapons were proposed to be supplied to them. A difficulty of an entirely different nature was posed by those countries who refused to join any of the alliances. However, these countries were all under-developed and needed external financial resources to carry out their development programmes, both economic and military. They were, therefore, sought to be kept tied down to the apron strings of the power giants by the grant of economic and military aid and by the threats of aggression by one power giant or the other. The situation appeared to be working well until politico-military developments began to take strange and wholly unexpected turn abouts.

In the first instance the build up of the nuclear stockpiles in the both giant countries was almost wholly of offensive type and each new weapon was lethal many times over the earlier one. For the first time in history, the defensive was found so much lagging behind that death and destruction could be rained upon the entire globe without any hinderance or obstruction. As a result of this, power was found growing vastly disproportionate to all the possible and probable war objectives thereby defying and defeating the very meaning and purpose of conflict and victory. It was further realised that whatever the spectrum of power used, the threat of escalation would be inevitable and inescapable and this in itself will serve as a powerful deterrent to the use of force.....that this will even reduce the ability to threaten,

because the threat would not be credible and the risks involved would be far too great and grave. In the second instance, nuclear general war had been visualised on the global scale and the alliances had been used as instruments to acquire the global capabilities. Military planners in both the giant countries got the first major set back when the alliances began to show cracks. The first shot in the Western Alliance side was fired by France which moved to acquire her own independent nuclear deterrent, howsoever limited to begin with. This was followed by similar decision by Communist China, world's largest and the most populous country. The developments in China emerged to be most significant and in quick succession. They changed most radically the very concept of a nuclear general war. The contest threatened to be triangular. In the third instance, the newly free countries were found to have their mutual irritants which could not be worth while for nuclear escalation. In the context of their mutual irritants, the newly free and non-nuclear powers were found to be rather reluctant to rely upon the nuclear giants and permit every conflict to escalate into a nuclear general war. The power giants themselves, whatever their involvement and commitments in these conflicts, were found to be reluctant to intervene in the nuclear way and thereby run the risk of a nuclear general war. This was for the time demonstrated in the Korean conflict and was repeated in all the minor limited conflicts that followed. However, whatever the contribution made by these factors to the limiting of nuclear war unleashing capabilities, the severest blow was dealt by the emergence of guerrilla warfare as the most favourite and most acceptable form of violence, conflict and war, particularly by the newly free and underdeveloped countries of the World.

World War II had seen a limited application of guerrilla technique of warfare in the German and Japanese occupied countries. However, the technique was used in truly massive and really effective way by Communist China. The tactics and strategy of guerrilla warfare were perfected at the hands of **Mao Tse Tung** and the victories that it scored demonstrated clearly its survivability capabilities against the most lethal conventional weapon systems available then. In the post war years, the experiment in **Vietnam** demonstrated clearly and categorically that nuclear weapon systems were much more helpless in the face of guerrilla warfare than even the conventional weapons systems. Actually, it was found that they could hardly be committed to combat actions against the guerrillas.

WAR STUDIES :—Throughout the period of history, the supreme test of a people's preparedness for war had been the possession of assured destruction forces capable of surviving the most co-ordinated surprise attack and then hitting back to kill the enemy war making potential and survive to reap the fruits of victory. Efforts throughout the period had been to remain prepared for a threat much greater in extent and magnitude than normally visualised or expected. However, upto 1945, sole reliance for understanding the growing complexities of modern war and preparing the future commanders for fresh contests was on military studies.....functional and organisational aspects of war. It was only, after 1945, that much of it began to be inappropriate, except for professional historians or lovers of military antiquarianism. The place of military studies was gradually and progressively taken over by 'War Studies', a subject much wider in scope and spilling into various fields of activities other than war proper.

Military theoreticians had even earlier conceded that war was an aspect of human behaviour, a phenomenon of intergroup social psychology. War had all along been intimately involved with the whole historical process. In its turn, it had been affected by economic, social and technological changes. Since the middle of the nineteenth century, the old distinction between military and political policies had been becoming increasingly blurred. The need to divert limited national resources to the requirements of defence had become a problem of great complexity and the one which involved



pour POSTMAN purity

**-into
for** **ALL your cooking
added nourishment!**

100% Refined Groundnut Oil

is nature's own health-giving food. Ahmed Mills extract and purify the oil, making it crystal clear, odourless, free of hydrogenation and impurities. Then Vitamins A & D are added and this nourishing cooking medium is brought to you in hygienic sealed tins bearing the Government AGMARK seal of quality.

POSTMAN is wholly suitable for ALL your cooking, both vegetarian and non-vegetarian.

No smoke. No boiling. No grime or grease on pans. No wastage. You can re-use the residue. *So a spoon of POSTMAN does the work of one and a half of the others.*



POSTMAN

INDIA'S
LARGEST-
SELLING
COOKING OIL!

Make it your **ONLY**
cooking medium for
HEALTH—TASTE—ECONOMY!

Ahmed Mills
BOMBAY 8



the civilians and military alike. However, they now contended that democratisation and industrialisation of warfare, and the demands of a nuclear age which forced states at best to deter war altogether or at worst to limit it in its intensity, had changed the whole character of warfare. In the new context, the need to preserve security had come under constant threat from technological innovations and breakthroughs by potential enemies. Advanced technology had diminished the distinction between war on land, on the sea and in the air. Long established organisational and administrative divisions in the Services had come under dispute. Rapid Technological changes and social and political turbulence had created problems in the field of strategy unprecedented in complexities. In an age when total war threatened the very survival of mankind, and when the entire world had become an echochamber, the influence of soldiers in defence and military planning, as compared to civil, had declined sharply. Hence civilians had to be relied upon increasingly for significant contributions to strategy. Again the incredibly complex and costly demands made by military planning, research and development and so on had made it essential that military requirements were firmly interwoven with the general requirements of economic and social policy.

In essence the need for new studies arose from the facts that strategy in the new context was restrained by the nuclear missile and was heavily dependent on physical and social sciences. As a result of this, the professional soldiers had to think in the context of technology within a strategic framework which was vastly more complex and novel than anything known in the past. Two main trends could be discerned in the new strategic thinking. First, thinking about how to conduct a modern war and secondly how to limit war when it did occur despite all the efforts to the contrary. Strategic study in the past depended very greatly on historical research, wherein military history could be an effective guide. The pendulum now swung in favour of analysis because historical study in depth alone could shed the requisite light on how men reacted in political and military crisis, how wars arose and why conflicts showed tendencies to escalate and so on. Another feature of the contemporary world which made the study of military history increasingly obsolescent was the emergence of revolutionary warfare and guerrilla warfare as a form of violent political conflict. In this context, the opposing forces ceased to be similar in organisation and structure, motivation and weapon systems. The fight was no longer for the ground but for popular support. Under the circumstances, Jomini, Clausewitz and Douhet could wait. This same however could not be the case with Marx, Lenin, Mao, Guevara and Giap.

It has now been fully conceded that while war remains endemic in human society, it is of crucial importance that members of profession of arms study it not simply from an operational angle but from a perspective which would see war as it is, namely as an aspect of human behaviour, a complex of political, social, economic, psychological military and moral factors. Besides, it is now considered necessary to understand that war is permeated with chaos and uncertainty which makes prediction and planning hazardous. Under the circumstances, therefore, war has to be studied in historical width in order to deduce continuities and discontinuities in doctrines, techniques and so on, in depth so as to see what really happened in a particular war and most important of all in context in order to understand that wars are violent conflicts of societies. In the new context wars have to be studied not simply as strategic and tactical disposition on the field of battle, weapons and logistics, but also in the political, economic, social and cultural environment, in which they occur. Considerable progress has since been made in the systematic formulations and presentation of War Studies. However, it is still not a coherent field of study. As at present it is a collection of number of disciplines, the more important of which are:

(a) **Conflict Studies** :—Which attempt to analyse the nature of war by the use of psychology, anthropology, game theory and simulation and by using past and present case studies of significant conflicts. (b) **Strategic Studies** :—Which examine the role of force in international relations. These studies include the study of deterrence, limited war, crisis management and the impact of science and technology on war. (c) **Peace Studies** :—Which are devoted to the means of avoiding the use of force, controlling it or eliminating it altogether. These studies include essentially the process of disarmament and arms control, mediation techniques non-violent resistance and ethical and legal restraints on the use of force in international relations (d) **Defence Studies** :—Which examine particular problems defending one's own country. Defence studies include the study of the size and shape of military force, recruitment policies, defence management, weapons procurement and the relationship of the armed services to the civil society. The latest trend in the study of war has been in relation to the vulnerabilities of man and his works to those of the enemy. It has begun to be increasingly emphasised that the vulnerability of man and his works to destructive forces is an inescapable factor in every military equation and no accurate evaluation or prediction of the processes of war can be possible unless it is taken into consideration.

SHAPE OF THE WARS TO COME :—Over twenty five years have followed the close of World War II. These years have witnessed the withering of all empires and the emergence of free and unfettered countries.....both big and small.....some of them so small as not being equal to a few districts of the bigger ones. These years have also witnessed unprecedented emphasis on the principles and practices of democracy which by their very nature militate against wars. Apart and aside of this, these years have witnessed unprecedent concentration on banishing and outlawing war and bringing on earth the Utopia of peace by a host of world organisations, including the United Nations. It may be treated as a sad reflection on the achievements of the pacifists or the worshippers of peace or a stunning vindication of the view point held by Adolph Hitler of Nazi Germany, these years have not been free from wars or the threats of wars. Actually, there have been more wars, 'limited conflicts' though, during these years than during any other period of similar duration in earlier history. The cause of this has been that, despite all the changes in the political status of the countries, despite all the emphasis on principles and policies of freedom and democracy and despite the mounting industrial and commercial inter-dependence of countries and peoples, mutual tensions and mutual irritants between countries have continued to exist and persist.

In the hour of his approaching defeat, Adolph Hitler, like a prophet declared, 'With the defeat of the Reich, and pending the emergence of the Asiatic, the African and perhaps the South American nationalism, there will still remain in the world two great powers capable of confronting each other.....the United States and Soviet Russia. The laws, both of history and geography will compel these two powers to a trial of strength, either military or in the fields of economics and ideology'. True to this prophetic declaration of the Nazi Leader, the post war years have seen these two great countries on footing of perpetual confrontation and committed to armament race of the very ultimate type to outdo and outbeat each other. Between themselves, and despite the limitations imposed by the cracks in the alliances, these two countries still possess the capabilities to unleash the hell of war which will destroy them and destroy all the rest. God alone would know when 'that dark hour in the history of mankind will strike'.

Comparable to the presence of Soviet Russia in the last war, the post war years have seen the emergence of Communist China as the third power giant. The largest and the most populous country in the world, having abundance of unexploited natural resources, Communist China has been remarkably successful in building up a mighty and monstrous war machine, armed and equipped with military hardware of her own origin and of no less lethal capabilities, and has thereby retained her own freedom of action and manoeuvre. Unquestioned and undisputed master of the theory and practice of guerrilla warfare, Communist China has carried her guised military presence in all the neighbouring countries on the Asian, African even European continents. She has thereby made politico-military decisions more dependent upon her than on any other country of the world. To contain and restrain Communist China and deny to her the capabilities of changing the world balance of power and terror by inclining towards one power giant or the other or by covertly assisting one under-developed country against the other, she has become a bigger problem than the solution of the mutual tensions and irritants of the two erstwhile power giants. In matters military Communist China has all along been unpredictable. In matters military, Communist China will always remain unpredictable except that Communist China has all along been on war path and Communist China will always remain on war path in the name of communist revolution, which is just another name for Chinese domination of the world, at least the under-developed world. The story of the other free countries, both big and small, has not been very different. They have had their own mutual irritants and to the extent permitted by their financial resources, they have all along been committed to military build up and increasingly inclined to seek solution to their mutual irritants by the force of arms **India and Pakistan and Israel and the UAR** may be cited as the more prominent instances. Within the countries themselves, the military has been playing its "role of force" is evidenced by coups and counter coups staged.

The above said picture would convince anybody that the future of mankind would not be free from the scourge of wars. The only question which can be discussed and debated is what kind of warsand of what extent and intensity, nuclear general wars, limited conventional wars or guerrilla wars. The threat of a nuclear general war has existed and persisted throughout the years following the close of World War II. This threat will continue to exist and persist so long as the power giants do not retreat from the path of nuclear build up and destroy all that they already possess. However, the world community may leave a sigh of relief that on account of the changes in the politico-military set up of the countries, the wholly offensive capabilities of the nuclear weapon systems and unbearable burdens that any further development will impose even on the richest of countries, the threat of nuclear general war has been receding every dawn and dusk and the tribe of those has been multiplying who think that nuclear general war may never occur. However, as during the years gone by, the threat of conventional wars will continue to be more real, immediate and practical. More than this will remain the threat of guerrilla wars between the countries and within the countries. The threat would be of no mean magnitude because of the political consciousness and in fact that even the conventional weapon systems have since acquired speed, mobility and fire power many times over their predecessors.



**DOES THIS MARK
MEAN ANYTHING TO YOU?**

It'll. When you're looking for your dream crockery.
Cups, Saucers, Plates and Tea Sets.

Come, build your dream crockery
with Navbharat Pottery bearing this mark.

navbharat potteries pvt ltd., Sewri, Bombay-15.

CHAPTER II

PRINCIPLES OF WAR

.... A STUDY IN THE CONTEXT
OF FORCE AND VULNERABILITIES

THE immortal truth that, "the essence of combat does not change, only its elements change," is the foundation on which the Principles of War have been built. In their broadest sense, Principles of War have been defined as ideas about strategy, evolved from time to time, stripped to their barest essentials and converted into maxims. There are some who believe that listing of the principles of war is a modern habit or a vice and represents and reflects a more general tendency to condense and encapsulate the fundamentals of military knowledge for the guidance of future military commanders. This, however, is not a true historical presentation. Throughout the period of history, military leaders have talked of these principles. They have emphasised in no uncertain terms a thorough understanding of these principles before engaging in a war and their maximum application and implementation while conducting operations. Throughout the period of history, it has been the considered opinion of military theoreticians and operational commanders that, there has always been a step from "knowing to doing" and not from "not knowing and still doing". However, Principles of War, even restricted and confined in their study and scope to organisational and operational aspects of war, as hitherto, have been discussed and debated more elaborately than ever before during the present century and have had profound effect on military history, particularly during the two World Wars. In the post war years, far from losing their original importance, these principles have begun to be discussed and debated, not only in the organisational and operational aspects of war, but in the context of 'Whys and Hows' of the entire business of war.... Not only in the context of how one combatant may employ the forces at his disposal most gainfully, but in the widest context of force and vulnerabilities. Principles of War, and this includes the principles of vulnerability, are now taken to apply equally to military organisations and to nations which employ them.

VISIT GUJARAT.....

**Famous for its Cultural and
Archaeological Heritage**

CULTURAL

- * Somnath Temple (Veraval)
- * Sun Temple (Modhera)
- * Shaking Minarets and Carved stone Jali (Ahmedabad)
- * Jain Temples (Palitana)
- * Rudhramal (Siddhapur)
- * The King of Forest, the Gir Lion (Nunagadh), One and only place to see lions in Asia

ARCHAEOLOGICAL

- * Pre-historic excavations at Lothal

INDUSTRIAL

- * Oil Fields at Cambay, Ankleshwar & Kalol
- * Gujarat Refinery and
- * Fertilizer Factory (Baroda)
- * Amul Dairy (Anand)

For detailed information please contact :

1. The Director of Information,
Govt. of Gujarat, Sachivalaya,
Block No. 8, Gandhinagar,

Tel : 441 and 437

2. Gujarat Information Centre,
72, Janpath, New Delhi.

Tel : 46248

3. Gujarat Govt. Tourist Office,
Dhanraj Mahal, Apollo Bunder, Bombay.

Tel : 257039

NOT RIGID LAWS:—Ever since their first enumeration, the most characteristic thing about the principles of war has been that they have not been accorded the status of rigid laws and have never been commended, even by the original authors and the most enthusiastic advocates, for blind adherence. They have been recognised as principles not in the sense that they set forth cause and effects, but rather as considerations that should be in the mind of all men commanding military operations, large or small. At best, they have been considered common sense propositions which are generally, but by no means, exclusively pertinent to the waging of war. Commenting upon the authority and utility of the principles of war, Sir Winston Churchill one of the most prolific writers on military matters in our times, observed; 'The truths of war are absolute, but the principles governing their application have to be deduced from the circumstances which are always different. In consequence no rules are any guide to action'. Commenting upon the same, Bernard Broddie, another renowned military commentator has observed; 'If we wish to avail ourselves of whatever light the wisdom of the past can throw upon our problems, we must go beyond the maxims which are at present abbreviated expressions. The maxims may be the final distillate of profound thought, but they are likely to be as such only at their first use, when they are still apt expressions and not slogans. When they become common currency, they are already likely to be counterfeit. Reginald Bretnor, who has emerged as a pioneer in the study of war in the context of equations of force and vulnerabilities, has observed :

"In what sense then are these sets of principles of war lacking? And how, by examining them, can we begin to develop a new framework of theory capable of producing similar, and perhaps, even greater improvements today and tomorrow. These questions can be best answered by considering what these principles are and what they are not. In the first place...and this is rather more than a mere quibble over words...they should not, strictly speaking, be called principles of war. Other than indirectly, by implication, they do not describe the processes and relationship of war. Though derived from and related to a comprehensive and profound theory of certain of these processes and relationships, they themselves do not convey that theory. Secondly, therefore, they neither express a whole theory nor they constitute a whole science of war. Instead they may be termed principles for the conduct of war...rules which properly comprehended and adhered to by a commander, should bring him a high percentage of successes. Thirdly, while an excellent case could indeed be made out for their immutability and universality, these qualities are not at once obvious and indisputable. Cases are numerous where one or more principles of war have seemingly been 'successfully violated' and this itself invites the suggestion that the principles themselves may be altered by the changing conditions of war." Elaborating his theme further, Reginald Bretnor has gone on to say :

"In the first instance, these principles do not accurately describe the processes and relationships of war. The reason for repeating and emphasising this statement is that laws or principles which do not accurately describe processes and relationships cannot be relied upon to predict or control them. To control, we must predict; to predict we must describe accurately, to describe accurately, we must omit no essential element of the processes concerned. In short, they do not include the forces of the enemy directly and explicitly in their descriptive framework. While emphasising only the positive aspects of war, they virtually exclude from consideration the central negative factor of vulnerability. Under the circumstances, therefore, if we are to attain accuracy, neither of these can be excluded, for the major and minor processes of war alike can be described

accurately only with the whole equations and without these two factors no whole equations can be written. In order to evaluate their proper role, therefore, it becomes necessary to re-examine the processes of war in general, reducing them to their simplest of common denominators, defining them functionally and at least suggesting the mathematical patterns of relationship which constitute the equations of war."

JOMINI AND CLAUSEWITZ :—The first known persons in history to enumerate the principles of war were the Chinese philosopher and military genius **Sun Tzu**, with his nearest contemporaries **Ssu Ma Jun** and **Wu Chi** in his own country and **Confucius**, **Menivius**, **Eneas** and **Tacticus** in Europe. There must have been similar enumerators in other countries. However, military historians and reserachers do not seem to have gone into deeper details. In recent times, the generally accepted enumeration has begun with **Jomini** and **Clausewitz**. **Jomini**, who is claimed to have done for the study of war, something akin to what **Adam Smith** did for the study of economics, took up the study convinced that, war is a form of human activity here on earth and it must make some sense. He maintained against, what he regarded obscurantism, that human mind was capable of discerning and stating in some systematic form, methods which are more likely to bring success in the field of battle. In *Traite*, he asserted that, there have existed at all times, fundamental principles upon which have depended good results in warfare...these principles are unchanging and independent of the kind of weapons, of historical time and place. In '*Preci de la art de la guerre*' he asserted that the very purpose of the book was to demonstrate that there is a fundamental principle in all operations of war, a principle which should preside over all other measures adopted so that they be successful. **Jomini** ultimately came to the conclusion that fundamental principles of strategy constituted in ;

(a) Bringing by strategic measures, the major part of one's armed forces successively to bear upon the decisive areas of a theatre of war and, as far as possible, enemy's communications without compromising one's own, (b) Manoeuvring in such a manner as to engage one's major forces against parts only of those of the enemy, (c) Further more, in battle, by tactical manoeuvres, bringing one's major forces to bear on the decisive areas of the battlefield or on that part of the enemy's lines which it is important to overwhelm, (d) Arranging matters in such a fashion that these masses of men are, not only brought to bear at the decisive place, but that they are put into action speedily and together, so that they can make a simultaneous effort. This very general and necessarily somewhat abstract formulation, **Jomini** made more concrete by numerous specific instances from military history, pointing out that, history proved that the most brilliant successes and the greatest defeats were the result of adherence to or violation of the fundamental principles.

In contrast to **Jomini**, who stands in the history of military thought as a theorist of strategy, General **Karl Von Clausewitz** bent his mind to the consideration of the nature and the essential spirit of war. His work "*On War*" has since been considered the very first study of war which truly grapples with the fundamentals of its subject and the very first, which evolved a pattern adaptable to every stage of military history and practice. While elaborating his theme on what principles should govern the plan of war and its execution **Clausewitz** mentioned two, which he held to be fundamental. These were :

(1) To reduce the enemy's weight of power into as few centres of gravity as possible, into one if it can be done, (2) To confine the attack against these centres of force to as few principle undertakings as possible, to one if possible,

and to keep all secondary undertakings as subordinate as possible. In a word, the first principle was to concentrate as much as possible and the second to act as swiftly as possible, to allow of no delay or detour without sufficient reason. Besides this, Clausewitz laid down series of general principles which he deduced from his principles of war objectives. They were; (a) To conquer and destroy the enemy's armed forces; (b) To get possession of the material elements of aggression...the hostile army; (c) To gain public opinion. Next, Clausewitz laid down the principles which could be followed in the attainment of the above, which he called objectives. The Principles were; (1) To employ all the force which could be made available with the utmost energy, (2) To concentrate force as much as possible at the point where the decisive blows are to be struck, (3) Not to lose time, by rapidity many measures of the enemy are nipped in the bud and public opinion is gained in our favour...surprise is the most powerful element of victory, (4) To follow up the success gained with utmost energy. Pursuit is the only means of gathering up the fruits of victory. The first of these principles was the foundation of three others. In exact military terminology, the principles of war laid down by Clausewitz were; (1) The principle of the maintenance of the aim or the object; (2) The Principle of Security of Action; (3) The Principle of Mobility of Action; (4) The Principle of Expenditure of Offensive Power; (5) The Principle of Economy of Force; (6) The Principle of Concentration of Force and (7) The Principle of Surprise.

OTHER AUTHORS. :—Other outstanding military theoreticians, who have since greatly influenced military thought in recent times and who have been high priests of the Principles of War are Henderson, Foch, Collin, Maurice, Fuller, Liddell Hart, Burne, Montgomery and Macklin. Henderson in 1899, listed Security, Concentration of Force, Simplicity and Pursuit. Foch in 1903, listed Economy of Force, Free Disposal of Forces, Freedom of Action, Security and Surprise. Collin in 1912, listed Selection of Aim, Security, Concentration of Force, Offensive Action, Mobility or Movement and Surprise. Maurice, in 1929, listed Concentration of Force, Economy of Force, Surprise, Mobility, Offensive Action Co-operation, (Unity of Command) and Security. Liddell-Hart, in 1920, listed Economy of Force, Flexibility, Don't lunge if your opponent can parry, Never reinforce failure. Burne in 1944, listed selection of Aim, Morale, Concentration of Force, Surprise, Security, Mobility or movement and Co-operation (Unity of Command). Montgomery in 1945, listed Air power, Administration, Offensive Action, Mobility or Movement, Surprise, Concentration of Force, Co-operation (Unity of Command) and Simplicity. Macklin, in 1948, listed, Selection of Aim, Security, Morale, Surprise, Flexibility, Offensive Action, Administration and Concentration of Force. It has since been conceded that Fuller's influence, together with that of Liddell-Hart, while not always immediately obvious, has done much to change military history of our times.

With Best Compliments From

Phne : 357086

Grams : MOTOR POWER

**AEMPHICO
ENGINEERING WORKS**

**SHEDESHI MILLS ESTATE,
OPERA HOUSE, BOMBAY-4.**

WELCOME TO ENTREPRENEURS

MYSORE STATE INDUSTRIAL INVESTMENT & DEVELOPMENT CORPORATION LTD.

(GOVERNMENT OF MYSORE UNDERTAKING)

No. 36, CUNNINGHAM ROAD, — BANGALORE-1B

Telephones : 28177
28609

Telegrams : 'INDEVCORP'
Telex : 315

CAPITAL (WHOLLY SUBSCRIBED BY GOVERNMENT OF MYSORE)

AUTHORISED	Rs. 5,00,00,000
ISSUED AND PAID-UP	Rs. 4,18,32,000

BOARD OF MANAGEMENT :

Shri T. SHAMANNA	Chairman
Shri T. R. SATISH CHANDRAN	Director
Shri MANI NARAYANASWAMI	Director
Shri M. D. SHIVANANJAPPA	Director
Shri B. PUTTARAJ URS	Secretary

THE PRINCIPAL SERVICES OFFERED BY THE CORPORATION ARE :

- **PROMOTING** Industries directly.
- **PARTICIPATION** in and underwriting of the share capital of new industrial projects with or without controlling interest.
- **APPLYING** for and securing industrial licences.
- **PREPARATION** of Feasibility Studies/Project Reports.
- **CONSULTANCY** on Industrial Projects.
- **ACQUISITION** and procurement of machinery and equipment.
- **GUARANTEE** for loans/performance and
- **ASSISTANCE** to industries.

Securing infrastructure facilities like water, land, power supply etc.

The Corporation is also the agency for channelising all Government investments.

FOR DETAILS OF FINANCIAL ASSISTANCE AVAILABLE AND TERMS AND CONDITIONS THEREOF,

PLEASE APPLY TO OR CONTACT PERSONALLY,

THE SECRETARY
(BY PRIOR APPOINTMENT.)

PLAN YOUR PROJECT IN MYSORE

PRINCIPLES OF WAR ORTHODOX OR CLASSICAL CONCEPT

IN his preface to the "Foundations of the Science of War", General Fuller told of his initial inability to find any clear statement of the principles of war, of his search for them and of his formulation of them. However, he enumerated the following; (a) The Principle of the Objective, (b) The Principle of Mass, (c) The Principle of the Offensive, (d) The principle of Security, (e) The Principle of Surprise and (f) The Principle of Movement. In this article published in the *Journal of the Royal United Service Institution* for February 1916, "The Principles of War With Reference to the Campaigns of 1914-15", he added two more principles to his original list. These principles were; (a) The Principles of Economy of Force and (b) The Principle of Co-operation. In 1920, these principles, very slightly modified, were included in *British Field Service Regulations*. In 1923, they were reprinted in Fuller's "The Reformation of War". Finally, in 1926, "The Foundation of the Science of War", the following developed list was published; (a) The Principle of Direction, (b) The Principle of Concentration, (c) The Principle of Distribution, (d) The Principle of Determination, (e) The Principle of Surprise, (f) The Principle of Endurance, (g) The Principle of Mobility, (h) The Principle of Offensive Action and (i) The Principle of Security. In 1935, the said principles were restated as follows: (a) Maintenance of objective, (b) Concentration of Superior Force at the decisive time and place, (c) Surprise, (d) Co-operation, (e) Economy of Force, (f) Security, (g) Offensive Action and (h) Mobility. In 1950, which is the latest known version, these principles were listed as; (a) Maintenance of Objective, (b) Morale, (c) Offensive Action, (d) Security, (e) Surprise, (f) Concentration of Superior Force at the decisive time and place, (g) Economy of Force, (h) Flexibility, (i) Co-operation and (k) Administration.

THE US VERSION:—In the United States of America, nine concepts of war qualified for inclusion in the U.S. Army's official list of Principles of War. These nine were claimed to have qualified from dozens of candidates because they had figured most prominently in military history as being needed most by successful commanders and ignored by their opponents. This list has remained static, despite the pressures exerted by many others, including perhaps by such candidates as; (a) Leadership (b) Morale (c) Prior Planning and great many others including perhaps; (a) Quantification (b) Maximization (c) Cost Effectiveness and even Systems Analysis. The first listing occurred in the *Training Regulations 10-5 of 1921*. However, these principles were listed without any elaboration or explanation in details. Following are, however, the set of principles currently taught at the *United States Army Command and General Staff College*: (a) The Principle of the Objective, (b) The Principle of the Offensive, (c) The Principle of Simplicity, (d) The Principle of the Unity of Command, (e) The Principle of mass, (f) The Principle of Economy of Force (g) The Principle of Manoeuvre, (h) The Principle of Surprise and (i) The Principle of Security. These principles are, in part, at least, derived from Fuller's list and illustrate the influence that his work had even in the United States.

USSR VERSION:—Literature on the original military thinking in the USSR has continued to be scarce. This has been despite the fact that recently there has been greater understanding and closer relationship between the USSR and the United States of America. The position is very likely to improve now that India and USSR have entered into a Treaty of mutual friendship and co-operation at all levels and in all fields of activity, including military activity. However, from the literature produced and published in the United States of America and the United Kingdom, and not known to have

been contradicted by the military theoreticians in the USSR, it is contended that the various **Soviet Field Service Regulations**, hitherto compiled, have all contained explicit and implicit principles of war. . . the **Permanently Operating Factors** which have been contrasted with the **Transitory Factors**. In the first version, the Principles included were; (a) **Stability of the Rear**, (b) **The Morale of the Armed Forces** and (c) **The Quantity and Quality of Divisions**. In 1958, however, the said principles were stated as; (a) **Morale**, (b) **The Stability of the Rear**, (c) **Ability of the Commanders**, (d) **Armament** and (e) **Quality of Divisions**. The only significant addition to these principles of war has since been the **theory and practice of Operational Art**.

According to **Raymond L. Garthoff** of US, the concept of Operational Art was first developed by two officers of the Imperial Army just before the First World War. It was carried into the Red Army by **General A. Svechin**, an Imperial Army Officer who joined the Reds and became one of the most active writers on military theory during the early days of the Red Army. A much broader exposition of the Operational Art was made in 1929 by **V. K. Traindafillov** in his book; '**The Character of the Operation of Modern Armies**'. In his view, the broadened scope of modern war, the greater number of those participating in combat and the improved technical quality of weapons had created the need for a new approach to the study of tactics and strategy. The strategist could no longer be concerned with individual operations. Modern war had made that inconvenient and inefficient, if not impossible. The commander who would now be in charge of operations may not necessarily be a strategist, yet he would certainly have to be more than a tactician. He should be called '**Master of the Operational Art**'. The concept, it is claimed, continued throughout the military experience of World War II. It also projected itself into the military thinking in the post war years, is evidenced by some of the publications of 1960s. Most notable of such publications have since been, '**The Combat Course for the Soviet Armed Forces**' and '**A Short Sketch of the Development of the Soviet Operational Art**'.

OBJECTIVE:—The Principle of Objective has been ranked first by all enumerators of the Principles of War. Throughout the period of history it has been recognised by all captains of war that there are two great rules of strategy. The first is to correctly select the primary object. This is the master rule. The second is to so concentrate and deploy the forces as to ensure that the objective is achieved. It is the principle of objective, which focuses all politico-military activity upon the objective, supplies all connecting links that impart coherence to war, simplifies all problems, proposes co-ordination and continuity of effort, facilitates the correct applications of all other principles of war and if properly implemented, support the war aim or the objective of the larger force (the Nation or alliance), of which it is a part.

Hitherto, the principle has been discussed and debated in the context of the actual conduct of war only. However, with the spilling of war into various areas, other than the battle field proper, the discussion of the principle has come to encompass increasingly the entire politico-military activity, right from planning, preparation for war to the actual battle commitment of the armed forces. It has now been emphasised that objective has to be relevant. . . the relevance being determined by the degree to which the enemy's vulnerability values are concentrated in it. In other words, objective in every instance has to be relevant to the enemy's force depending upon it, for it is this relationship which would determine its relevance to other equations as a whole. Unless it is thoroughly comprehended, men would die uselessly, resources would be thrown to no purpose, and state of war will endure interminably. It is the extension of the scope of discussion which has led many military theoreticians to draw a line of demarcation between various objectives, which can be international, national and local, political, economic, military and even social, major or subsidiary, strategical or tactical

etc, all of which may not need the battle commitment of the armed force, but would certainly need their presence as the sanction.

Writing on the new approach to the subject of objective, Liddell Hart has observed, "The term objective, although in common use, is really not the correct one. It has a physical and a geographical sense and that tends to confuse the thought. In discussing the subject of objective in war, it is essential to be clear about, and keep clear in mind, the distinction between political and military objectives. The two are different but not separate. It would be better to speak of objective while dealing with matters of policy and of military aim when dealing with the war forces that are committed in the service of the policy. It should be borne in mind that military objective is only a means to an end... the policy objective. Hence military objective should be governed by the political objective subject of course to the basic conditions that policy does not demand what is militarily, that is practically, impossible." However, whatever the categories and gradations of objective, the inter-relationship and inter-dependence between national policy and military objective has now begun to receive greater emphasis than ever before. Writing on the inter-dependence of national policy and military aim, Reginald Bretnor has observed:

'In a world where wars occur, there must exist a functional relationship between the several factors of military equations and national policies. It is all very well to try to divorce the two, to say that the be-all and end-all of military is to carry out that policy, whatever it may be. This is neither desirable nor practical. Regardless of all other considerations, national policies must, in order to ensure anything approaching an optimum response, cut its coat according to the cloth of their military capabilities. In the short term, this means that it must operate within the framework of those military equations which immediately confront it. In the long term, it means that national policy must plan to alter the balance of the equations favourable so that the response to situations, whether unasked for or necessarily created, will be optimum. Sometimes circumstances will dictate that the response be immediate, sometime that it may be delayed and sometimes that there be no response at all. The relationships are intricate and the line between policy, limited by military considerations, and the one dictated by military, can be narrow and dangerous one. But nothing can be gained by denying or ignoring the fact that the relationship are real and inescapable'.

MORALE:—Basic and most critical to all equations of war is the morale of the people and their armed forces. . . their unshakable will and iron determination to do and achieve, whatever the hazards and risks. In the ultimate analysis, in the context of force and vulnerabilities, it is the will of the people and their armed forces, which stands predominant and commanding in the centre of the art of war like an obelisk towards which all principal streets of a town must converge. It is, therefore, vital that highest morale is achieved while committed to the preparation for war and it is sustained at that level throughout the period of combat operations.

Morale, it must be borne in mind deals with intangibles, the non-physical determinants of force. It is, therefore, a quality easy to recognise but difficult to define exactly. It is on account of this difficulty in the definition that there has all along been a vast and wide divergence of opinion on the factors which ultimately go to constitute morale. In its narrower concept and limited meaning, morale has been defined as 'high sense of loyalty up and down, from the Head of the state, through all echelons of command'. However, a further elaboration of morale in the comparatively wider

politico-military concept has recently been made by General Mac-Arthur of the US Army. In his speech at West Point in May, 1962, the General said :

"The very essence of morale and leadership can be summed up in three words. . . duty, honour and country. . . These hallowed words reverently dictate what ought to be done, what can be done and what must be done. They are the rallying points to build courage when courage seems to fail, to regain faith when there seems to be little hope for faith, to create hope when hope becomes forlorn. These are the things that these words irresistably create. . . They build the basic character, they mould one for future roles as the custodians of nation's defence. They make one strong enough when he is weak and brave enough to face when he is afraid. They teach to be proud and unbending in honest failure but humble and gentle in success. Not to substitute words for action, not to seek path of comfort, but to face the stress and strain of difficulties and challenges. To learn to stand up in the storm, but to have compassion on those who fail, to master their ownself before seeking to master others to have heart that is clear, a goal that is higher, learn to laugh yet never forget how to weep, to read into the future and never forget the past, to be serious, and yet never take oneself too serious, to be modest so that one remembers the simplicity of true greatness. They open mind to true wisdom, the meakness of true strength. They give temper of the will, a quality of imagination, a vigour of dominance of courage over timidity and appetite for adventure over love for ease. They create in one's heart the sense of wonder, the unfailing hope of what next and the joy and inspiration of life, they teach in this way to be officers and gentlemen".

The above, indeed a poetical composition and flight into the highest regions of imagination, has been found lacking in its relevance to the hard realities of war. A further step for consideration of morale in the context of war has come from the Soviets. According to them, 'The morale factor, the very spirit of the armed forces, depends primarily on the nature of the political aims of the war and consequently the very nature and character of the social system, the nature of the political aims of the war, that is what the given state is fighting for, on the degree of consciousness of men and commanders of the armed forces, on the depth of their understanding of the justness of the war to which they are committed and the necessity of waging it to save their own country and their own way of life from attackers and aggressors, on the depth of their love for the motherland and upon their faith in the righteousness of their cause, upon their faith in victory, upon their faith in the leaders of the country and commanders of the armed forces'.

A very significant advance on the original definition though, the Soviet definition still did not take into active consideration the vital factors of force and vulnerabilities...the physical and non-physical determinants of force and morale. This elaboration has only recently been made by Reginald Bretnor of the US. Writing on the subject, he has observed :

'The value of mental and morale determinants of force cannot be exaggerated. However, paradoxically, they have been woefully exaggerated ever since the dawn of military history. Morale, however high, and training however excellent cannot multiply the destructive force. At best, they can enable its fuller realisation and at the worst, and herein lies their full importance, they can reduce that value cataclysmically...And this brings us to the vital question of the physical determinants of force...the weapons. The value of weapons as determinant of force is derived from their characteristics...their primary and

secondary radii of expression, their volume of expression and their potential areas of saturation. There can be no substitute for weapons and weapon power. Sometimes able enemy is prevented from taking advantage of his weapon's superiority and again such an enemy may be deluded into believing that no such deficiencies exist. However, these are the methods always to be aimed at, they cannot be relied upon to compensate for weapons deficiencies. It has often been argued that there have been many tasks apparently impossible but have nevertheless been performed by resolute men who had no alternative to death. However, these assertions have ignored and overlooked that men have accomplished only, that which appeared to be impossible according to accepted rules and usages, or, military equations inaccurately evaluated. The line between the 'imporable' and the physically impossible has always been a hazardous and narrow one, and in critical cases a hair's breadth has divided the victory from defeat, success from senseless suicide. Under the circumstances, therefore, while recognising that there will always be occasions when the impossible will have to be attempted. But the military doctrine cannot and must not prescribe the attempting of it as a matter of routine. In the equations of war and especially in a technological age, vital as it may be, there can be no adequate substitute either for hardware or horse sense.'

In the ultimate analysis the vital elements in high morale would be the spiritual values of loyalty, devotion and dedication to the nation's cause, which in other words would mean faith in the justness of war, possession of superior weapons systems, highest standards of skill and training and adequate sources and resources of supplies and reinforcements...and all this in the context of vulnerabilities that similar sources and resources at the disposal of the enemy may create and present.

CONCENTRATION AND ECONOMY OF FORCE :—The Principles of Concentration and Economy of Force, though seemingly different, are in fact deeply co-related and indivisibly inter-dependent. The principle of concentration has been defined as 'avoiding dispersion of strength in order to maximise the chances of superiority at the decisive point and time' ... In order to achieve success in war, it is essential to concentrate superior forces and to sustain them as such at the point of contact so long as it is required to score victory. As the sum total of all other principles, this principle in general serves to achieve decisive combat superiority and ensures desired results in combat. However, the principle of concentration has, as its direct counterpart, the principle of vulnerabilities. In all processes of war, there is the positive factor of force and the equally important negative factor of vulnerabilities. In any military equation, each of these elements must appear in two aspects, representing the positive and negative values of contending sides. Obviously, therefore, the concentration of vulnerabilities, whether they are literal concentrations of vulnerable targets or tactical and strategical focuses of the vulnerabilities of functions, have to be avoided. It is only by defining vulnerability as an ever present factor in all military processes and by evaluating it accurately, that the principle of concentration can be given its real content, vigour, strength and effectiveness.

Economy of force has been defined as judicious expenditure of resources and balanced employment of forces for the purpose of achieving decisive concentration of force at the desired point and time. It has also been defined as proportional distribution of forces and resources to accomplish assigned tasks in their assigned priorities. The principle in general serves to permit the concentration of superior forces at the decisive point and place by allocating to secondary tasks, only the minimum forces necessary for the fulfilment of their planned contribution to the success of the main effort, to guard against the reduction of essential strength through detachments of assignment to relatively unimportant tasks or missions and to encourage the wise

THERE IS

NO RIVAL TO

MYSORE SANDAL SOAP

FOR

SKIN CARE

● THE SANDAL OIL IN THIS LUXURY TOILET SOAP
KEEPS YOUR SKIN HEALTHY AND GIVES IT A YOUTHFUL COMPLEXION

● A DISTINCTIVE SOAP FOR THE DISCRIMINATING

MYSORE GOVERNMENT SOAP FACTORY

BANGALORE-12.

INDIAN ARMED FORCES

SERVE THE NATION

IN PEACE AND WAR

●
THEY HELP MAINTAIN

- National Integrity
- Serve People in Natural Calamities
- Floods, Draughts, Earthquakes

UTTAR PRADESH

CONTRIBUTES MEN IN LARGE NUMBERS TO THE ARMED FORCES

- Sturdy Jats From Western Districts
- Vibrant Youth From Eastern Districts
- The indomitable Kumeouni & Garhwali From the North.

**CITIZENS OWE A DUTY TO EXTEND SUPPORT AND
CO-OPERATION TO THE ARMED FORCES.**

expenditure of resources for present, in order to preserve power for final concentrated blows. However, it is sharply contrasted against holding back of forces when they can be gainfully employed. Further, whatever its positive contribution to the success in war, it is also considered the most dangerous and risky principle, if implemented without exact intelligence of the enemy forces and resources, their disposition and their capabilities of surprise, dispersion and concentration at points left to secondary priorities and reduce to naught the military value of major concentration. The entire art of war being concentration of force and blocking of vulnerabilities and denying the same capabilities to the enemy, this game of chess demands skill and care of the highest order.

MOBILITY:—Throughout the period of history, time in the military equations has been a decisive multiplier of force and vulnerabilities. Armed forces, therefore, have always sought to possess the means of greatest mobility...in any case greater than those of the enemy. At first glance, it would seem that mobility requires no exact definition. According to Webster, it is just the capacity or facility of movement. Elaborated a little more, it is the capacity to express maximum force over the maximum space in minimum time and in so doing avoid any critical realisation of vulnerabilities. However, in the military context, a line of distinction has to be drawn between an intrinsic ability to realise that capacity for movement and the situational capacity. It has further to be borne in mind that in the realisation, mobility is always relative, regardless of its potential value, its actual value is determined also by the mobility of the enemy. As a determinant of time in the equations of war mobility also becomes a determinant of realised force. More mobile elements can build up faster than less mobile ones; they can maintain force more readily, they can express force in greater radius and do with greater frequency. The only limitation in the context of modern war would be technological. While sometimes increased mobility may seem worthless or even detrimental, this would not be true in principle, for unless means used to achieve it are themselves too vulnerable, too difficult to maintain, too expensive, the ability to move more rapidly than the enemy must always be an advantage.

Mobility has always depended partly on space, partly on the characteristics of the elements involved, and partly on the other basic values as they develop in the specific equation. The mobility of units, the separate mobility of their sub units, the rate at which they can realise potential mobility under the conditions given, and their vulnerability, all these together, with the corresponding factors for the enemy, have to be taken into consideration. The nature of weapons is specially important, for it is a basic determinant of the character, not only of combat elements but of supporting ones, dictating at once their capabilities and limitations. Weapons for instance, largely determine the battle field formations. These formations again decide the time required for deployment from march to battle order, for a change of front or a dis-engagement, or indeed for any other evolution or the battle-field. Throughout the processes of war, a very large part of the art of generalship, remains the ability to perceive appropriate advantages of the situation. This is reflected in every set of rules, maxims and principles of war. It is reflected with singular clarity by those situations where conditions of terrain prevent the realisation of normal mobility.

Mobility is a determinant, not of force, but of the radius of expression of mobile elements, and, therefore, of the value of force which can be expressed within that radius in a given time. It cannot be too often emphasised that, while mobility in the logistics and manouver phases always confers an advantage, it has no military value in itself. In the equations of war, it is always an enabling factor...a substitute for weapons for infinite range, accuracy and destructive power, and a round about way of accomplishing what such ideal weapons might accomplish directly. It is of value only

because it implements the realisation of force and prevents the realisation of vulnerabilities by the enemy. To sum up, the mobility of all elements must serve one purpose, the achievement of that unbalanced equation which is the only proper goal for generalship.

CO-OPERATION :—Like the principle of objective, the **Principle of Co-operation** has been considered a unifying principle in as much as objective designates the common aim, co-operation brings about the common endeavour. In effect, the principle strives for decisive application of maximum power of available forces and resources to the realisation of objective by bringing about unity of command, unity of effort and intelligent co-operation at all levels and in all fields of activity thereby bring about unity of national will. Like the principle of objective, the principle of co-operation has hitherto been discussed in the context of the actual conduct of war and in relation to the armed forces only. However, with war ceasing to be what it was during more civilised times...a natural force beyond the control of man, and when nations and their armed forces were separate in the minds of man. The principle has now begun to be discussed and debated in the context of all the equations of war...force and vulnerabilities. In the new context, the problems of defence and security are no longer estimated purely by figures in the armed forces and co-operation within that strength. Any calculation of strength of a country at war has now begun to take into account, the entire resources of that country, man power, industrial, agricultural and morale. Even this sum total, so difficult to work out, has become too simple for truth. The measure of a nation's strength has now come to be estimated, not only in the context of its own forces and resources, but also the measures of vulnerabilities. In the new context, the problems of defence and security are no longer estimated purely by figures in the armed forces and co-operation within that strength. The measure of a nation's strength has now come to be estimated not only in the context of its own forces and resources, but also the measures of vulnerabilities to attack. The later, as much as the former, has begun to be taken to affect all calculations of war, from the highest scale of comparative defence situations of countries, down to the affect which a particular weapon system may be credited. Further, vulnerability itself being a compound of factors, the relative vulnerability of a nation at war is now taken to be affected, not only by its geographical, but by its industrial, political and even sociological conditions. It has been conceded that the very factors that augment the war strength of a nation may at the same time produce counter balancing degree of vulnerability. The role of co-operation in the context of modern war is therefore dual...to produce results positive to the war effort in all its aspects phases and stages on the one hand and prevent conditions and circumstances which may produce results negative to the war effort...building up the elements of strength and blocking the elements of vulnerability.

SURPRISE :—The **principle of surprise** has been defined as maximum use of stealth and deception and cover in planning, preparations, innovations and inventions in weapons, strategy, tactics and every thing else that would go with war, so that the enemy is taken unaware and unprepared and is unable to react and retaliate effectively. It has also been defined as the process of creating situations at a scheduled time and place for which the enemy is unprepared and which would upset his plans so as to engineer an unconsidered reaction on his part. The principle in general serves to strike the enemy when and where he is unprepared and with such weapon systems as have not entered into his planning and preparations and thus achieve confusion in and slackening of his effort and initiative, to give one's own forces morale, material, tactical and strategical advantages over the enemy, at a time and place when it would be too late for the enemy to entirely overcome and to permit the attainment of maximum gains with the minimum expenditure of effort. Throughout the period of history, surprise has been recognised as the most fundamental principle of war. Military commanders have generally con-

tended that without it one might as well not engage in war for all other precepts go towards fulfilling this one vital and indispensable principle. **Surprise and surprise again . . . when the first surprise is dying away then confront the opponent with yet another surprise. Do not allow the enemy to gain or keep the initiative. The enemy, however, strong always has some weakness, some fear or the other. Play on it and keep him confused. Change the bowling, change the field, change the shape, change the form, this is the essence of all strategem.'**

Surprise can be brought about by striking at an unexpected moment or from an unexpected direction or with unexpected strength put into the blow. Normally, it is the compound of all the three methods. Surprise can be of various types, ranging from strategical to tactical one. . . to the one based on a simple artifice or strategem. There can be surprises of time and place, of organisation and alignments, of material designs and weapons. In our time, the surprises in weapons, or what is better known as technological surprises, have become of particular interest and importance. This has been partly on account of the accelerating curve of scientific progress which has promised tomorrow's technical surprises undreamed of yesterday, and partly because our age has become notable for its unbelievable failure to exploit them fully.

The nature of technological surprises, of the scientific methods and of modern industry dictate two rigid rules for their employment. The first is that any relevant and effective technological surprise must be employed in adequate mass and at the proper time and place. . . in other words, it must be used to produce a major critical imbalance, or if employed to achieve minor critical imbalances, enough of these must be planned to contribute to the achievement of a major one. The second rule is that any critical imbalance, achieved by technological surprise must be effectively maintained to prevent the enemy from compensating for it. It has further to be borne in mind that technological surprises are of full value only when they are used. The longer they remain unused, the smaller becomes their value and the chance of their ultimate realisation, regardless of the tightness of security. The same is true of the alliances which in our time have emerged as major instruments for the sudden and surprising change in power equations without any significant change in other elements of force.

Vital as it is, the principle of surprise cannot be the exclusive preserve of one side only and there can be no greater folly than to take it so. In the present day equations of force and vulnerabilities, the role of the people and armed forces committed to war becomes dual, . . . creation of surprises and guarding against the similar capabilities of the enemy. Leaders of the people and commanders of the armed forces have to think ahead and foresee what unexpected action the enemy might take. They have all the time to be prepared for the most improbable by the enemy.

SECURITY :—The Principle of Security has been defined as guarding of one's own forces resources and communications against surprise, even when on the offensive. Security, in the military sense of the term is of two kinds, *i.e.*, Security from material injury inflicted by the actual blows of the enemy and security from the risk of one's plan being upset by any such action which the enemy might take. The principle embraces all measures which must be taken to guard against any form of counter strokes which the enemy may employ to prevent the attainment of the national objective. The application of the Principle of Security, in general, provides for the protection from unacceptable damage to restrictive interruption of that which is vital or highly important in accomplishing the objective, for the avoidance of integrity of plans and of classified information and in its entirety, for the preservation of the capability of gaining the objective, in a word, reduction of vulnerabilities to the very minimum.

Ogale

HAND-MADE AND MOUTH-BLOWN THIN WALLED GLASS TUMBLERS



**PREFERRED BY ELEGANT HOMES, CLUBS,
HOTELS AND RESTAURANTS ALL OVER INDIA**

OGALE GLASS WORKS LIMITED, Ogalevadi, Dist: SATARA

STUSA 33/89



T. Maneklals and the chapters of challenge

The first high tension Rubber Torques for self-reliance in Defence

The Indian Jawans applauded.
The Government of India signed up on the deal.
Maneklals proved their claim
to manufacture high tension rubber torques
for use in rugged defence equipment.

Imports no longer necessary.
The country one step ahead
in defence self-reliance.

**These were some of the many times
T. Maneklals hit
the high spots of their
challenging achievements!**



**T. MANEKLAL
MANUFACTURING CO. LTD.,**

Vaswani Mansion, Dinshaw Vachha Rd., Bombay-20
Branches: Ahmedabad, New Delhi and Calcutta.

T. Maneklals thrive on challenge

ACR017/TM/33

Security in war is a complex problem calling for compound solutions. There is the need for security to the personnel against direct loss, such as casualties inflicted by the fire or assault of the enemy, as well as against premature exhaustion from the lack of supplies, ammunition and rest or due to the interference with the life-line of the force.....its communications. There is also the need for security to the morale of the troops. It may be undermined by any of the foregoing causes, and may even more quickly be destroyed by the shock of an enemy surprise or through the loss of confidence due to bad handling, and unnecessary loss of life. Finally, there is the need for security against indirect, though equally serious, danger to the plans which would suffer, if the enemy is able to avoid or turn to meet the decisive blow. Security in war is gained in the first place by disposition or formation. Disposition is needed to save casualties from fire and to avoid the danger that a surprise attack from a flank may overwhelm the whole force or unit before a change in another direction to meet it can be effected. In the second place, initial security is obtained by information. This is gained in battle by observation and also by probing. In the third place, security depends at all times on the smooth working and co-ordination of the different parts of the force and the units which compose them. Security by disposition and information is primarily obtained prior to the general engagement of a force or its commitment to a definite role. Security is subsequently assured by the forward body attacking in one direction to fix the enemy so firmly that he is unable to avoid or turn to meet the decisive surprise attack delivered from another direction.

OFFENSIVE ACTION :—The principle's of offensive has been defined as, seizing the initiative at the appropriate time and exploiting it to the very maximum to force a victorious decision. In general, this principle serves to exploit at every opportunity, the initiative inherent in offensive action, to bring vigorous and timely concentration of force against weak concentration of the enemy, to create favourable conditions for attack, to raise morale, to preserve the commander's freedom of action for imposing his will on the enemy and in exploiting the offensive, to insure maximum gain...victorious decision.

An almost unchallenged postulate of military thought has been the elevation of the offensive form of warfare. Every list of principles of war has incorporated this principle with extraordinary emphasis. Indeed few of the traditional principles have been considered applicable without the application of strategic or tactical initiative. Over the centuries, theorists and philosophers of conflict have compared the respective strength of the offensive and the defensive. The balance has shifted back and forth, inviting ceaseless interpretation and re-interpretation. The two forms of warfare have accordingly alternated in favour or against, underlying certain forms of tactics, strategy, weapons, organisation and alignments. The process has not been rational always. Codes of valour have very often blocked rational and thoughtful approach. However, intrusions of non-rational elements have invariably been on behalf of the offensive. Indeed, the allure of the offensive has remained the most dangerous penchant. So much has been the exaltation of the offensive that a group of pupils of Marshal Foch have gone to the extent of writing that; 'Defensive battle was unable ever to create victory.' They emerged obsessed with the virtue of the offensive and utterly committed to the conviction of *elan*, the iron will to conquer. The philosophy was later further crystalised by them as, 'offensive outrance...the unlimited offensive, which alone could strip the enemy of the initiative and force him to conform to one's own will. The US Army official doctrine has put it bluntly; only offensive action can achieve the results.'

The above was only in the context of land warfare. However, with the dawn of the twentieth century, the same concepts were introduced in warfare on the high

seas. The beginning was made by **Admiral A. T. Mahan of the US Navy**. He saw navy's strategic task as principally offensive and straightforward...to meet and defeat the enemy's force of capital ships and gain and maintain the command of sea. It was Mahan's new thought which committed the world navies to the build up of capital ships strength. Mahan did not accord rightful recognition to the offensive capabilities of submarine, which like tank and aircraft, had come of age. He, therefore, did not see in the sub-marine as an independent strategic weapon, but as a supporting agent in grand fleet operations. However, the whole concept changed during World War I, when Germany unleashed the unrestricted submarine warfare. The results demonstrated the stunning offensive capabilities of the submarine arm and brought about a revolution in the art of war on the high seas. Navies, relying upon their submarine arm, in preference to capital ships, became more offensive minded than they had ever been before. (See also 'War On Sea').

Prior to 1941, the youthful but primitive aircraft appeared mainly as an instrument of reconnaissance. Amid the prevailing popularity of the offensive in land and sea warfare, such a role in the air seemed prosaic and unrealistic. Concerned over the lagging development of the air weapon, the French were the first to argue that even reconnaissance aided best the attack and had very little to offer for defence. No serious thought immediately appeared to have given to this argument by other experts on air warfare. Military aviation developed rapidly during World War I and demonstrated its offensive capabilities. However, military experts were still reluctant to accord this recognition to the air weapon. A new era of recognition opened only with the **General Douhet of Italy** who emphasised in most categorical terms that aircraft possessed superlative qualities in the offensive role...that because of the air weapon's unprecedented mobility, it represented the offensive instrument par excellence. It were his theories which later became the foundations of the concept of strategic bombing. For some time it earned for the aircraft the proud distinction of being the decisive war winning element. (See also 'War in the Air').

Whatever the significance and importance of the offensive, whatever its placement in the order of the principles of war, whatever its lure and appeal to the practitioners of the art of war, and whatever the stakes placed on it by the national policy, offensive has never been something which can be mounted by the touch of a magic wand or at the will and pleasure of the angry and indignant military commanders, or in the present context of war equations, angry and indignant political leaders. The most opportune time for offensive has always been and shall continue to be when the side moving to offensive has achieved decisive superiority of forces and has reduced the vulnerabilities to the most insignificant minimum. In the modern military parlance when critical imbalance has been achieved and firmly established. In the words of **Reginald Bretnor**, 'The equations of war always have two sets of value, one's own and that of the enemy. When these two are too nearly balanced, the attrition of force tends to be slow and action indecisive. (This is not the occasion for offensive and, if launched would prove virtual suicide). When by military art or by natural circumstances, they are shown sharply out of balance, attrition can be swift and action decisive. (This is the time for offensive). The battles and campaigns where decisive victories are achieved are usually those in which a critical imbalance is established...that point of no return where inevitably the enemy's realised vulnerability has escalated and his force decayed. Therefore, critical imbalance should be the goal of all military theory, and military planning, by all military commanders and essential pre-requisite of all offensives.'

PUBLIC OPINION :—Clausewitz has since been the only one to include the principle of public opinion in the list of principles enumerated by him. However, this inclusion even by him has been indirect and related to another principle of war 'offensive' in its after effects. It has not been independent and in its own right.

This has been despite the fact that war even under absolute dictators and militarists has been dependent upon public opinion, already and naturally existing or artificially created. After all, regimentation has been only the other name for artificially created, maintained and sustained public opinion. This has also been despite the fact that world in our time has almost wholly moved under democratic regimes. The policy maker in the democratic regimes is the civilian, drawing his power and authority from the masses of people and there has been the need of educating the personnel of the armed forces on the justness of war to which they may be committed. This education cannot be divorced and detached from public opinion. However, it has been recognised and conceded that under democratic regimes, public opinion is the supreme directional force in the matter of preparing, launching and conducting war. It has also been recognised and conceded that no military theory or doctrine has any chance of survival unless it rests on popular foundations. Finally, it has been recognised and conceded that in the context of the present day equations of war, when the struggle is not so much for the ground but for popular support (public opinion), this factor along with other non-physical determinants of force, has emerged vital to the creation of critical imbalance and thus opening the road to victory.

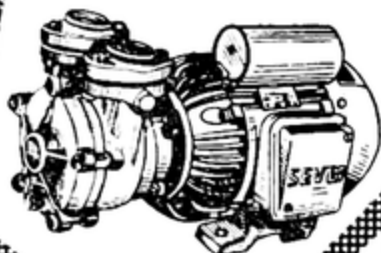
ADMINISTRATION:—Sound administration has always been the governing factor in the optimum realisation of all operational and administrative plans in peace and in war. It has been recognised and conceded that, unless there is a government which governs best and has the utmost confidence of the people, there would be no harmony, balance and maximum participation by the people, and the country and the people will always be open to vulnerabilities, whatever the elements of force in being. The soundness of Government and efficiency of administration has become important many times over now that there has to be hard revaluation of all military prospects from the stand point of potential force and potential vulnerabilities and their determinants at every step; when there has to be reassessment of every category of war from the standpoint of, not only the determinants of force and vulnerabilities, as they exist, but as they would in all probability exist a year from now, two years or even five; when home and foreign policies have to be constantly revised in the light of fresh re-evaluations and re-assessments and when every effort has to be made to close the gap between the men of policy and military commanders. Further, the ground work of any critical imbalance has to be laid in the first stage of the preparatory phase, except in those instances where the weakness or miscalculation of an enemy permits second stage resources to function fully. Therefore, pre-war preparatory phase activity has to be planned with the maximum potential of the probable enemy in mind with a minimum reliance on war time (second stage) preparatory phase activity and, in any case, this second stage activity has to be so planned that, regardless of enemy counter measures, it will provide the continuity of force necessary to the achievement of grand critical imbalance. Throughout both the stages of the preparatory phases, the nation and its civil and military authorities have to concentrate on selecting the optimum instruments for the expression of relevant force, on providing these instruments and on developing the other determinants of force to the maximum of their potential.

SIMPLICITY:—Simplicity is also not included in the generally enumerated lists of principles of war. However, simplicity is again a principle of vital importance. It has been proved by history that simple and direct methods of planning, preparation and ultimate operation, which facilitate the proper observance of all other principles of war. They alone reduce to their very minimum the possibilities of failure in warfare. In summing up, it is the principle of simplicity which serves to facilitate the observance of the other principles of war, to keynote to correct planning, and to promote really effective execution of all plans and operations. Simplicity is the most difficult of the principles to attain in practice. However, it is the simplest plan which can insure victory the best.

WATER SHORTAGE

WE ARE NOT RAINMAKERS but our specialists can advise you how to overcome it. Whether boosting or drawing from a TUBEWELL we have the pump for your specific need. CALL upon us AND we guarantee a solution. OUR ADVICE IS FREE HOWEVER OUR PUMPS ARE DEAR. YOU PAY FOR QUALITY and the SERVICE WHICH IS OUR TRADITION.

SELF PRIMING DOMESTIC PUMPS



SUBMERSIBLE ELECTRIC PUMPS

UNSURPASSED FOR RAISING WATER FROM WELLS & BORE HOLES PUMP & MOTOR IN ONE SELF CONTAINED UNIT CAN BE SUSPENDED ON ITS OWN RISING MAIN. NO HOUSING NEEDED. ONLY PUMP AVAILABLE IN INDIA WHICH CAN GIVE 4000 GALLONS PER HOUR FROM A 4" TUBEWELL HEADS UPTO 500 FEET.

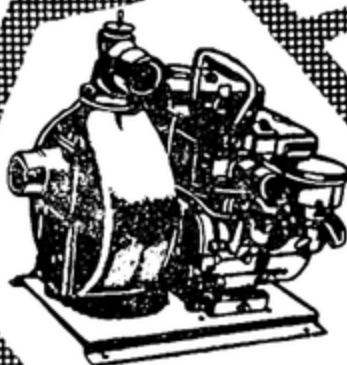


the pumps with a pedigree

BERESFORD

PUMPS

CONTRACTOR GENERAL PURPOSE PUMPS



**MODY INDUSTRIES (FC)
PVT. LTD.**

62 BHAWANI SHANKER RD., DADAR
UNDER LICENCE JAMES BERESFORD
& SON, LTD., BIRMINGHAM

CHAPTER III

STRATEGY AND TACTICS

..... A STUDY IN CLASSICAL AND MODERN CONCEPTS

CONCEPTS of strategy and tactics have been considered as old as hills. Throughout the period of history, it has been recognised and conceded that concepts of strategy and tactics are the heart of all military thinking and they alone enable a full and proper grasp of all other military concepts...when expressed clearly, they place all other military theory in proper perspective. Much ingenuity has, therefore, been expended on defining these concepts exactly. Strange and intriguing as may a sound, none of the definitions hitherto evolved, has been considered all inclusive, exact or even adequate. In the words of Reginald Bretmor, 'These are the wide nets through which much wind has blown. Until today, most news media and most public men employ these words with so little precision that one can be substituted for the other without much loss of meaning contained in the definitions. Examples of this are rather easier to find than to avoid.'

Main difficulty in the matter of defining the concepts of strategy and tactics exactly has arisen from the changing nature, character and environments of war, its extent and intensity, the politico-military objectives sought to be achieved and the instruments of force pressed into service. In particular, the difficulty has arisen from the fact that most discussions on strategy have been suffering from the mantic confusion in the commonly used meaning of the word "strategic". The first meaning evolved has been that Strategy is the art or science, or a complex combination of both, of military command and of directing movements of military forces committed to war...the use of strategem or artifice for the carrying out of any project, the application of the broad fundamental principles of war. The second meaning evolved has been, action as the physical destruction of the enemy's war-making potential and rendering him unable to continue the struggle. The fallacy that strategy and destruction are synonymous and cause the development of weapons strategy, both come from the careless use of the second meaning of the word 'Strategic'.

Maharashtra gives the LEAD

MAHARASHTRA can legitimately boast of the
most progressive co-operative movement in the country.

NEW DEVELOPMENTS in co-operation originate in Maharashtra. After their success in the State, they spread to other parts of the country.

The following could well serve as a few glorious examples :

THE CROP LOAN SYSTEM of financing agriculture
CO-OPERATIVE SUGAR FACTORIES laying the foundation of many other co-operative processing societies.

MONOPOLY PROCUREMENT OF FOODGRAINS through the co-ordinated activities of marketing, processing and credit co-operatives.

MUTUAL ARRANGEMENT SCHEME FOR CO-OPERATIVE BANKS

FIRST CO-OPERATIVE ENGINEERING SOCIETY
Manufacturing agricultural implements.

A WELL-EQUIPPED CO-OPERATIVE HOSPITAL.

THE SPIRIT BEHIND THESE PIONEERING ACTIVITIES—

THE MAHARASHTRA STATE CO-OPERATIVE BANK LIMITED

Head Office :
9, Bakehouse Lane, Fort,
BOMBAY-I.

Regional Office :
Mahal,
NAGPUR.

Capital and Reserves	Rs. 19 crores.
Total Deposits.	Rs. 93 crores.
Total Advances.	Rs. 141 crores.
Total Resources.	Rs. 195 crores.

Apex of the integrated co-operative credit structure with over 1000 offices of Central and Urban Co-operatives Bank in Maharashtra.

DECAY OF CLASSICAL STRATEGY:—Comparable to the classical concepts, of 'Principles of War', the concepts of strategy and tactics which dictated and guided military commanders in battle engagements until the close of World War II, have now been classified as 'Classical Concepts'. In this sense, strategy connoted the conduct of war in the military sense from the outbreak to the cessation of hostilities. From French Revolution on, the destruction of the enemy on the battle-field was both its aim and fulfillment. For this to be achieved, it was necessary that a tactical situation is created which would make possible the concentration of all available force at the decisive point. Even Clausewitz, who understood the political aspects of war better than other theorists, regarded the practice of strategy as 'essentially in the military domain'. This was despite the fact that he was prepared to admit political influence upto the point where it concerned other details in the conduct of war. However, his own disciples later proclaimed that war excluded politics altogether. **Lundendroff**, actually turned Clausewitz upside down with his thesis; 'Politics is not a part of war'. This was the beginning of the crisis in classical strategy. Vast armies...millions strong...although militarily unbearable, were unable to achieve politically decisive victory. Based on almost inexhaustible reservoir of conscripts and an efficient war economy though, they were condemned to doubtful strategy of attrition which was contrary to all classical rules. The first World War showed what an important part non-military factors could play in strategy and what the results could be when the determination to win military victory frustrated all political aims. This experience was most tragically confirmed in the Second World War. The world wide movement towards social liberation and technological development of weapons, of which electronically controlled thermonuclear rockets were only one example, introduced new factors, new fronts, new forms and new intensities of war. In the face of such developments classical strategy became helpless.

MODERN STRATEGY:—In the post-war period, classical concepts have ceased to have much validity. Their place has been taken up by the concepts of 'modern strategy,' which are a complex combination of social, political, economic, technological and military factors and they merge deep into the peace time conditions both preceding and following the war. In the modern concept, only one of the parents of strategy is the traditional, 'selection and application of military means to achieve political ends'. The other parent is 'military technology and available resources'. Strategy in the modern concept is claimed to grow from many different strategical points. Science has begun to play an important part in all these developments. The concepts of modern strategy, as generally held valid now, differ from their classical counterparts in the following important ways; (a) They require the co-ordination of all political and social action towards the achievement of a particular political aim, which in essence would mean the struggle for freedom of political action. (b) As instruments of this kind of strategy, the armed forces can no longer play their exclusive, indeed even an important role. It is because real political effectiveness can be achieved only under a strongly motivated political action, armed forces can, at best, be only one of the instruments of such direction. (c) The aims of military strategy, as a subordinate function of politics, thus becomes mainly, and above all, to prevent military war altogether, certainly its escalation, which in its scale and intensity would certainly be contrary to the particular, not to say, any political aim. This revolution in politics and conduct of military affairs has since confronted the politicians, the ordinary citizens, diplomats, scientists and professionals, and even soldiers, with entirely new problems, entirely new tasks and entirely new needs. These problems have emerged to be of such great complexity and political importance that they cannot be solved by mere intuition, experience, or the isolated knowledge of experts. Because of the dynamic nature of politics, society and technology, judgements made

today threaten to be obsolete and out of date the very next day...Governments, political and even ordinary people are confronted with decisions, the logic, scale and consequence of which are not easy to comprehend. This has rendered obsolete military studies as the source of all strategy and tactics. Their place has now been taken up by war studies which encompass the 'very Whys and Hows of War'...the study of war in historical width, in depth and in context. Strategy today has to be evolved, not only in the context of strategical and tactical dispositions on the battle field, in the context of weapons and logistics, but also in the political, economic, social and cultural environments in which they occur. Today, as never before, due to the changes which have occurred in the means to wage war, in the structure and working of the international systems and in the political, social and economic systems, making of strategy has become an extremely difficult and delicate task.

AUTHORS OF MODERN STRATEGY:—War has since ceased to be just a war. It has also ceased to be a 'set-piece war'. War has now grown to be subdivided into various categories. Accordingly, strategy has also moved into various categories 'Global Strategy', 'Regional Strategy', 'Grand strategy', 'Politico-economic Strategy', 'Weapons Strategy', 'Logistic Strategy', and the strategy pertaining to guerrilla or revolutionary warfare. There have of late been scores of authors and architects of modern strategy. Their tribe appears to be growing every dawn and dusk. However, the more important of them have since been Liddell-Hart, Andre Beufere, Rosinski and Skolovsky.

Captain Liddel-Hart, while developing a new dwelling house for strategic thought came to the conclusion that 'modern strategy means the art of distributing and applying military means to fulfil the ends of policy. Strategy, as such, is concerned, not merely with the movement of forces, as its role is so often defined...but with the effect...when the application of military instruments merge into actual fighting, the disposition for and control of such direct action as 'tactics'. The two categories, although convenient for discussion cannot be divided into separate watertight compartments because each, not only influences but merges into the other and the same is true in the case of strategy and grand strategy...strategy at the highest outlook and decision'. Elaborating his theme further, Liddel-Hart observed; 'As tactics is the application on a lower plane of strategy, so strategy is an application on a lower plane of grand strategy. While practically synonymous with the policy which guides the conduct of war, as distinct from the more fundamental policy which should govern its objective, the term grand strategy serves to bring out the sense of policy execution. For the role of grand strategy...higher strategy...is to co-ordinate and direct all the resources of a nation, or a band of nations, towards the political objective of the war...the goal defined by the fundamental policy'.

General D'Armee, Andre Beufere, has considered the definition given by Liddel Hart as too restrictive, because it deals with military forces only. He has defined strategy as 'The art of applying force, so that it makes the most effective contribution to the whole art of war'. The definition might sound awkward...awkward because, by tradition, the art of war is divided into strategy and tactics and a third sub-division logistics, which has appeared only recently. In his view point, the essence of strategy is the abstract interplay which enables the man, no matter what techniques are employed, to master the problems set by any clash of wills and as a result to employ techniques available with maximum efficiency and to maximum good and advantage. It is, therefore, the art of the dialectic of force, or more precisely, the art of the dialectic of two opposing wills using force to resolve their dispute.

Rosinki, another world renowned military theorist, has defined strategy as; 'the art of comprehensive direction of power to control situations and areas in order to attain objective'. Rosinki has observed that, during the past one hundred and fifty years, there has been a continuous effort to arrive at a satisfactory and illuminating definition of strategy and tactics. This effort has so far been greatly hampered by the fact that the definitions evolved have been verbal enumerations rather than analytical definitions. The definition which could bring it into better perspective and focus of the military thinkers of the past one hundred and fifty years, would be to conclude that, 'Strategy is the comprehensive direction of power, and tactics its immediate application'. This definition, however, would require the recognition that there is much more to strategy than mere direction of power. It must be a type of direction, which would take into account the multitude of possible enemy counter actions and thus it would become a means of control. To be more clear, it should be direction of power in the context of force and vulnerabilities and bringing about absolute superiority of force and absolute reduction of vulnerabilities. It is this element of control which is the essence of strategy...control being the element which would differentiate the true strategic action from a series of haphazard improvisations. Elaborating his theme further, Rosinki has observed, 'This concept of strategy as a comprehensive control is applicable equally to the offensive as well as to the defensive. On the offensive, the aim of strategy must be to break down the enemy's control, while simultaneously preventing him from interfering with our own attack. On the defensive, strategy must similarly seek to constrain the enemy attack to such a form and degree that, while the defensive may be forced back, it would still maintain its control and avoid collapse.'

Marshal Skolovsky, a former Chief of the Soviet General Staff, has written extensively on modern strategic theory. His view point has been repeatedly emphasised by all other Soviet military theorists and it has been incorporated into the strategic thought of all others committed to the anti-imperialist and anti-capitalist...the revolutionary wars. Naturally, the Marshal has not fully accepted the definitions of Liddell-Hart, Andre Beufere, General Ailber and others of the West. The Marshal has contrasted sharply the strategy of the imperialist powers, which according to him, has to be aggressive, anti-humanitarian, aimed at preparing and unleashing wars of aggression....wars of aggression particularly against the socialist countries...with that of the socialist countries which pursues just and progressive aims to the highest degree and to the farthest limits, ensuring security of the socialist commonwealth, restraining the aggressive urges of imperialism and directed at disrupting and repelling imperialist aggressions. The Marshall has finally contended that;

Military strategy is a complex social phenomenon. It includes the theory and practice of preparing for and waging of war, the field of activity of the highest military leadership of the state, in the co-ordinated use of the armed forces to achieve the aims of a given war. It has to do with all armed forces (including strategic nuclear forces in the present context). Its subject is the co-ordinated operations of all forces and means, the creative activity of the people united in armies, fleets and air forces (aero-space forces in the present context). A strategy which ignores the creative activity of the millions of people is doomed to failure. Strategy embraces combat operations of strategic scale. Operational art and tactics define more concrete methods of conflict to achieve strategic aims and there is, therefore, close connection and inter-dependence between strategy, operational art and tactics. However, the main determining role belonging to strategy. In the field of practical activity of the highest military leadership, in organising forces, and means, preparing them for war and co-ordinated use of armed forces, for solving the military, political and strategic tasks of the war. Military strategy without a scientific base is inconceivable.

A strategic theory works out ways of preparing and waging war for co-ordinated use of armed forces as a whole and separately, by generalising historical experience, evaluation of the international and internal political situations, the means of conflict, the opponents' capabilities and his modes of action. Theoretical research discloses the class essence of a military strategy, its connections with policy, economy of the state and with all sides of social life of the people.

'Among the tasks, of strategy is the establishment of basis of armed forces structure, equipment and the principles for using them. Both in theory and in practice, this task is performed on the basis of requirements for the country's security in any situation, taking into account level of economic development, the achievements of science and technology and the aggressive capabilities of the probable adversary. The most important task is strategic planning. This must stand at the centre of attention of the military leadership. The most responsible task for military strategy is the determining of the size of the armed forces for peace time and for war time, creation of reserves of weapons and equipment and of material resources, the deployment of strategic groups of forces and every aspect of supply for the armed forces in war'.

CURRENT SOVIET CONCEPTS:— As in the Western countries, so also the Soviets have divided Strategy into political and military categories. However, the Soviets consider political and military strategies as integral in the sense of identity of purpose.....to further the basic objectives of political policy. The Soviets also consider them complementary; co-existing with one another at all times, the one dominant in peace and the other in war.....each planned in a number of variants to fit various conceivable contingencies. In the current Soviet concept, the objective of military strategy is the creation by military means of those conditions under which politics is in a position to achieve the aims which it has set for itself. In this context, military strategy is directly dependent upon politics, to which it is subordinate. The armed forces are only a weapon of the policy. In the Soviet view, military strategy is a component part of the political strategy. Clausewitz conception that 'war is the continuation of politics only by other means' has, not only been accepted by the Soviets, but it has been carried further to its logical conclusions by adding that 'If war is the continuation of politics, only by other means, so also peace is continuation of conflict only by other means'. The scope of current Soviet concepts of military strategy were presented in some details in late 1954. The presentation included;

Contemporary strategy, as the science of directing military operations on the scale of military campaigns, and war as whole, has its main and immediate tasks; (a) Determining the basic means methods and possible forms of future war, on the foundation of the objective law of a concrete historical period; (b) Study of the strategic potentialities of the enemy as a whole and in each of the theatres of combat operations; (c) Determination of the concrete ways and means of armed struggle with the probable enemy; (d) Direction of the construction of the armed forces to correspond to the character and aims of presumed war; (e) Definition of the requirements for material preparation for future war; (f) Preparation in the theaters of military operations; (g) Selection of the direction of application of the main efforts in the war as a whole and in the campaigns in particular; (h) The disposition of forces and means by theater of combat operation and strategic directions (areas) (i) The accumulation and grouping of necessary reserves; (j) The actions of military means on targets in the enemys' rear in the interest of undermining his morale and economic potentials; (k) Calculation and utilisation of the results achieved

by non-military ways and means of struggle in the interest of military operations; (l) The organisation and direction of military operations in war as a whole and in individual campaigns.

The above is the scope in general. However, in the Soviet concept military strategy has a series of specific tasks which are summed up as follows : (a) Evaluation of the probable forms, means and methods of future war to determine the strategic concept which will guide the employment of the armed forces in possible future wars so as to achieve victory and the objective set for the given war most effectively; (b) Elaboration of the doctrine, structure, organisation, size and allocation of the armed forces to implement the requirements of the strategic concept for the achievement of victory; (c) Preparation of alternate war plans to meet various contingencies for possible future defensive or offensive wars against prospective enemies and (d) The deployment of military forces and reserves in relations to geostrategic priorities determined by the location of the objectives for neutralisation by seizure or destruction, including the prospective enemy's armed forces and other strategic objectives specified in the war plans.

BASIS OF STRATEGY :—The fundamental basis of modern strategy, particularly in the context of nuclear general war, rests on the notion that it should be able to deter a general war in the first instance. For this purpose, it will need a force of all arms ...a force large enough, secure enough and clever and stillful enough... to withstand any level of surprise or expected attack, and still survive to strike back to inflict unacceptable damage on the attacker. This notion is labelled as 'assured destruction capabilities'. The most difficult and delicate task of strategy in this context is its designing to meet the future requirements. Tomorrow's strategy will inevitably have to be designed around the forces that are available today. Naturally, the shaping of tomorrow's strategy around today's forces will present a famine of alternatives. Further, the matrix of military forces in our time is so costly that the hard headed realists will not easily abandon and the new strategists will not be able to change it swiftly. There will be conflict between the two...the hard headed realists and the new strategists... The new strategists would be hampered as much by the long time that it would take to design and build new weapons as by the resistance from those who would insist on getting the most mileage from the existing investment in military hardware. Naturally, even their efforts would, in the first instance be concentrated on the search for fulcrum from which today's strategy gets its purchase...the keystone that locks together strategy's arch. Even they would want to save as much of the old as may be useful, still bearing in mind that 'all has not been overtaken by events...all has not proved faulty'.

THE OBJECTIVE :—The ultimate objective of all strategy is to fulfil the objective laid down by policy, making the best use of the resources available. The objective in the present day context can be offensive, defensive or even merely to maintain the political status sought to be altered by the enemy. It is, therefore, obvious that formulae, such as that attributed to Clausewitz and others of his type, "decision as a result of victory on the field of battle" are not applicable to all types of objectives. However, whatever the type of objective, there is still the traditional rule applicable today as ever before; 'disregard the method by which the decision is to be achieved and consider only the outcome which it is desired to achieve.' The outcome desired, even today as ever before, is to force the enemy to accept the terms and conditions that are decided to be imposed on him. In this dialectic of wills, a decision would be reached only when certain psychological effect is produced on the enemy, when he becomes convinced that, the advantage of the decisive superiority of, force in being, on the other side, it would be futile for him to start or alternatively to continue the struggle.

REMEMBER

OXY-CHLORIDE FLOORING PRODUCTS LTD.

For
Jointless 'Stonette' and
'Elephant' Brands Composition Floors.

SUPPLIERS TO

- ★ RAILWAYS
- ★ TEXTILE MILLS AND SHIPS



*On the approved list of
D. G. S. & D. and Railway
since 32 years.*

THE TRADE HOUSE OF
LONG STANDING EXPERIENCE
AND QUALITY



ALWAYS AT YOUR SERVICE



Phone: 211571 or write
Arther Bunder, Colaba, Bombay-5.

CORRECT ANALYSIS :—Just as strategy is the paramount military concept so the objective is the paramount issue in the development of all strategy. Under the circumstances, therefore, the foundation of all strategy.....political and military and planning for the same, would lie in a correct analysis and understanding of policy objectives at all levels of command and decision and in all its phases and faces. The vital importance of the distinction between merely stating the objectives and an exact analysis and understanding thereof has been emphasised by Rosinski by stating that; 'except where there is overwhelming superiority of forces, strategy will have to be selective in order to ensure economy of forces'. Another vital aspect of analysis would be to recognise how the nature of objective and the degree of detail in which it is expressed, would vary with the level of scope of the executive and military authority involved. Part of the analysis would lie in being able to understand the situation or the conditions whose accomplishment will constitute the attainment of the objectives. This will apply particularly to establishing the relation between national strategy, grand strategy and military strategy. The analysis would be necessary to provide the unifying concepts essential for harmonious strategic action. Furthermore, in national or grand strategy, it would be particularly important to recognise that, in many instances, the complete attainment of specific objectives would not be possible. The task of analysis in this context would be to find out subsidiary objectives, changed and modified by the passing of time and course of events, and categorising them into vital, important or desirable...the broad objectives publically stated by political leaders and the lesser accomplishments that they may be compelled to settle for, either in the negotiations stage or in situations of actual violence. Analysis will also bring into proper and appropriate focus the interplay of one's own objectives and those of the enemy and the influence and counter-influence that they will have in actual operations.

THE MEANS :—To reach the decision required, strategy will need the whole gamut of means, social, economic, political, moral and material. With these availabilities, the art of strategy will lie in choosing the most suitable and so orchestrating the results that they combine to produce the desired and expected pressures for the achievement of the objectives. To choose the most suitable means, the strategist will have to take into account the vulnerabilities likely to be created by the means available to the enemy. In order to be the master of such overwhelming and differing phenomenon as war, cold war, total war, nuclear general war and above all guerilla and revolutionary war...concepts of strategy will have to remain under constant change and revision and broadening their scope. In order to do so, they will require personal involvement in the issues concerned and reflect the creative appreciation of those who formulate, elaborate and revise them. This element of creative mind would also be essential in the conduct of strategic affairs. Further, strategy ultimately would rest on the values of a people or the nation concerned, if these values are confused, contradictory or superficial, the strategy adopted will have the same contradictions. To have the national values clear of these contradictions, and, therefore, strategy more realistic and practical, will also need human element.

STRATEGIC DOCTRINE :—Every advanced country has more technical choices to make than it can afford. These choices ultimately depend more on strategic doctrine than on the technology available. However, strategic doctrine must never be thought of as something theoretical or dogmatic. Since its role is to define the likely dangers and how to deal with them, how to project feasible goals and how to attain them, it must furnish a mode of action for the circumstances which it defines as 'ordinary'. Its adequacy will be tested according to whether these ordinary events do in fact occur and whether the forces developed in their anticipation are adequate to deal with the real challenge. It is generally agreed that a wrong strategic doctrine can lead to disasters. Even an excessively rigid strategic doctrine can absorb great energy in the

attempt to reconcile what happens and what is expected. If it is too complicated, it can break down under the stress of decision-making. However, if there is no doctrine at all and society operates pragmatically solving problems on merits as the saying goes every issue tending to become a special case. It would mean more energy is spent on deciding where one is, than where one is going. Every event would tend to be compartmentalised and dealt with by experts in the special difficulties it may involve, without an adequate understanding of its relation to other occurrences.

PATTERNS OF STRATEGY :—Every Strategic plan must provide for every conceivable action proposed, taking into active calculation to the possible and probable enemy reactions. Enemy reactions can be international or national, psychological, economic or military. Each successive action planned, together with the counter to the corresponding enemy reaction, must be built up into a coherent whole. The objective must be to pursue the plan in spite of the enemy resistance. **General of the Armee Andre Beufere** has divided the strategic plan, thus prepared, into following patterns, cautioning however, that they may be considered more as examples than as exhaustive categorisation, and helpful only to better understanding of their nature and originality of strategic thinking :—(a) **The Direct Threat Pattern** :—In this case, the objective is only of moderate importance and the resources available are large. The mere threat of the use of force is expected to make the enemy to accept the conditions sought to be imposed. (b) **The indirect Threat Pattern** :—In this case, the objective is of modest importance but the resources available are inadequate to exert decisive threat. In this case the attempt to attain the objective is made by more insidious methods which may be political, diplomatic or even economic. This pattern is considered most suitable where freedom of action is limited. (c) **The Successive Action Pattern** :—In this case, the object is of major importance but the freedom of action is restricted and the resources available are limited to attain the objectives. In this context, a series of successive actions in which the direct threat and indirect pressure may be combined with limited application of force becoming necessary. (d) **The Protracted Conflict Pattern** :—In this case, freedom of action may be large but the resources available are inadequate to ensure a military decision. In this case recourse is made to strategy of protracted conflict with the object of wearing down the enemy's morale and tiring him out. (e) **Violent Conflict** :—In this case, the military resources available are of sufficient strength and decision is sought through military victory.

SUB-DIVISIONS OF STRATEGY :—Strategy is in fact a single entity in so far as object and methods are concerned. However, when it comes to applying, it is necessarily sub-divided into specialised categories, each applicable only to a certain field of conflict. Strategy, to a large extent, is governed by material factors. The material factor characteristics of each field of activity would differ, producing, therefore, a different chain of consequences applicable only to that particular field. This brings into active play the veritable pyramid of differing, though interdependent, forms of strategy. Following are the important ones :—(a) **Total Strategy** :—This comes at the top of the pyramid and under the direct control of the Government whose task it is to define how total war should be conducted. The task of total strategy is to lay down the object for each specialised category of strategy and the manner in which all political, economic, diplomatic and military forces should be woven in together. (b) **Overall Strategy** :—This is immediately below the level of total strategy and its function is to allot tasks and co-ordinate the various forms of activity within the field concerned. (c) **Operational Strategy** :—This represents the stage where concept and implementation meet, . . . when the optimum is adjusted to the possible in the light of technical limitations. Its purpose is not only to harmonise the objective laid down by overall strategy, with the capabilities of tactics and techniques used, but also to ensure that those tactics and techniques are developed in the direction which will best fit

them to meet future strategic requirements. It, therefore, has a vital role to play. It is also the one about which misconceptions occur most often. (d) **Logistic Strategy**:—There is always a peace time strategy at the operational level. It is primarily concerned with the production of new equipment to out-date that of an opponent. It has been termed **Logistic strategy**.

COMPONENTS OF STRATEGIC DECISION:—All Strategic decisions are taken within the framework set by the four main co-ordinates governing any situation at any given time. . . **time, space, size and morale** of the forces available. There is, in addition, a more complex factor, which in the modern military parlance is called '**manoeuvre**'. It is this factor, which governs the order and inter-relationship of successive situations. The factor of manoeuvre is the direct product of the dialectic of the conflict or, in other words, of the abstracts counterplay between the two opponents. Offensively, there are eight postures, **attack** which may be preceded or followed by '**Threat**', '**Surprise**', '**Feint**', '**Deceive**', '**Wear down**', and '**Follow up**'. Defensively, there are six postures, '**On Guard**', '**Parry**', '**Riposte**', '**Disengage**', '**Retire**', and '**Break off**'. As far as the actual forces are concerned, there are five possible types of decisions, '**Concentrate**', '**Disperse**', '**Economise**', '**Increase**' and '**Reduce**'. All these postures are ultimately aimed at freedom of action. The object in all the cases is to gain and to regain freedom of action or to deprive the enemy of the same. To ensure freedom of actions, it is essential to retain the initiative which is a fundamental factor in manoeuvre. Doctrine of Manoeuvre is further sub-divided into a number of conflicting sub-doctrines. One of them the '**geometric doctrine**' is positively dead. The '**geographic doctrine**' is also out-dated. The other two alive and assertive are, doctrine of '**Rational application of force**' and the doctrine of '**Guile**'. The former takes its starting point from the strength of the forces available and chooses the solution, which will permit those forces to exert their maximum effect. The latter has its basis in the psychological affect of the action proposed. The solutions chosen have to be the best calculated to throw the enemy off balance, disorientate him and deceive him.

MODES OF STRATEGY:—This is the process of choosing the pattern(s) and this falls into two modes. . . **direct strategy and indirect strategy**. In the direct strategy, the basic concept is the military forces as the principal weapon to achieve victory or deterrence. In the indirect strategy mode are included all forms of conflict in which decision is sought, not directly by means of clash between the military forces, but by less direct methods. These may be political or economic in nature or they may use military force but precede diplomatic measures in a series of bounds interspersed with political negotiations and fresh alignments. This mode of strategy has of late been increasingly coming into fashion, perhaps because any possibility of all-out war, as postulated by direct strategy, is feared likely to lead to an unacceptable level of mutual destruction. The mode of '**indirect approach**' has, in recent years, been most brilliantly developed by **Captain B. H. Liddell-Hart**. He has held it to be the best strategy. According to him, the essence of indirect approach in the operational sphere is, '**not to take the bull by the horns. . . in other words, not to challenge the enemy to a direct trial of strength, but to attack him only after he has been shaken, surprised, and thrown off balance by an approach from an improbable direction, which, therefore, he did not expect.**' According to Liddell-Hart, the strategy of indirect approach is imperative for the side which cannot be certain of being strong enough to beat the enemy in the battle on the ground of enemy's choosing. He has further pointed out that no one can ever be strong enough and that, even if the strength were there, victory by indirect approach will still be gained at reduced cost. For these reasons, he has recommended a systematic use of the indirect approach.

General Andre Beufere, while conceding the vital importance of indirect approach, as propounded and elaborated by **Captain B. H. Liddell-Hart** has preferred to give it the general title of '**Indirect Strategy**'. According to him, the essential difference between

the indirect approach and indirect strategy is not merely that the former has a geographical connotation. The object of the indirect approach is the attainment of military victory which is indirect. He has, therefore, placed the indirect approach in the category of indirect strategy. He has concluded by saying that; **'Indirect strategy is the art of making the best use of the limited area of freedom of action left by the deterrent effect, particularly of the nuclear weapons, and of gaining important and decisive victories in spite of the fact that the military resources which can be employed for the purpose in general remain restricted'**.

The first essential in indirect strategy is to decide how great, in the existing situation, is the area of freedom of action and then to make sure that the extent of this area can be maintained, or if possible, increased while at the same time reducing to the minimum that is available to the enemy. The truly original feature of indirect strategy is that, freedom of action available is dependent only to a small degree upon those operations which may be undertaken with the geographical area in question. It is determined entirely by the factors of this area e.g. an estimate of the international readiness of the enemy's morale fibre and his sensitivity, both to external pressures and to any action which may be taken and so on. The likelihood of success of any particular operation is, therefore, dependent upon the success of action on the world-wide scale. . . **the exterior manoeuvre**. The central feature of this is to ensure for oneself the maximum freedom of action, while at the same time paralysing the enemy by a multitude of deterrent checks. As with all operations designed to deter, action in this regard will ofcourse be primarily psychological, political, economic and diplomatic. Military measures will also be combined toward the same end. Having thus made sure of a degree of freedom of action, the next step would be to work out the manoeuvre to be employed, in the geographical area where it is desired to obtain certain results. . . . **Interior Manoeuvre**. The main components of these problems are the variable but inter-connected factors, material force, moral force and time. If the material force available is considerably superior to that of the enemy, the moral pressure becomes less necessary and the operation can be completed in a very short time. If, on the other hand, the material force available is small, moral pressure has to be very great and the operation is prolonged. There are, therefore, two forms of strategic procedure, one at each end of the scale. In the first, the objective is to reach very rapidly using the considerable superiority of material force. In the second, the idea is to reach the objectives, not so much by military victory, as by keeping up a prolonged conflict so designed and organised that it becomes more and more burdensome to the enemy. This is the **'encuration' or 'erosion'** method and its main characteristic is protracted conflict (See also guerilla warfare).

IMPLEMENTATION OF STRATEGY :—Napoleon while discussing the common sense rules of strategy said : **'There was nothing difficult about the art, the problem was to practice it'**. Strategy has since been recognised as the most important and most taxing and exacting mental exercise. Actually, it has been conceded that **'Strategy is no more than a means to an end. It is for policy to lay down the aims to be achieved by strategy, and policy is governed by the philosophy. Destiny of human race depends upon the philosophy which it chooses and upon the strategy by which it tries to ensure that that philosophy prevails.'** It has often been argued, if ever there were rules which could be used as guidelines for thought when choosing a course of action. In reply, it has been conceded by some that the classical military strategy did formulate such rules and they were even thought to be laws of general application and ever lasting validity. Strategy was, consequently considered to be an unchanging art in contra-distinction to the continual changes in tactics resulting from the evolution of equipment. However, in the concepts of modern strategy, there have emerged irrefutable reasons for doubting whether strategy was or could be ever unchanging and this has brought into active focus the factor of great importance in working out the strategic concepts...**the variability factor**

...the variability both of resources available and the circumstances surrounding their employment. As a result, the strategist can place no reliance on precedent and has no permanent unit of measure at hand. Strategic thought has to take into account the facts of change, not only those of the foreseeable future but the probable changes many years ahead. Strategy can longer proceed by a process of firmly based objective deduction, it has to work on hypotheses and produce solutions by truly original thought... There can be no rules of inventive ability. All that can be said is that there must be no routine about it. It must draw upon imagination and be the fruit of meditation. Modern strategy, like our civilisation is being carried along by the galloping advances in science and technology and changes in philosophies and ways of life. The consequences must be a fundamental change in the thinking habits of the strategists. In the context of modern strategy, it is the future, not the present which matters. The time lag for any operation must, in this context, be reckoned in terms of years.

TACTICS :—According to Clausewitz, 'Tactics are the methods for use by the armed forces in battle engagements. According to Farrow, the term means 'methods employed in handling troops in battle or in immediate preparation there. Generally, however, the term is defined as 'the immediate employment of weapons and forces to attain the objective determined by strategy'. However, none of these definitions have been considered all inclusive, exact or even adequate. It has been argued that these definitions tend to draw hard and fast lines between tactics and strategy and tend to show them as independent and unrelated processes. They also infer that battle field is the only province of tactics and strategy abdicates when tactics come to fore. They also overlook and ignore the vital fact that just as strategy moves up through grand strategy and merge with policy, tactics move from minor tactics, through grand tactics and merge with strategy. Further tactical dispositions are very often adopted for convenience, for time saving and for several other reasons, long before entry into the immediate presence of the enemy. This makes clear that tactics unguided by strategy would only lead to blind sacrifice's just to remain victorious on the field of battle. It has been emphasised to the task of strategy is to look beyond in order to make gains of tactics in accord with the strategic plan and place at the disposal of the tactics power appropriate to the results demanded. In the same context it is the task of tactics to make appropriate use of the power elements and ensure that results are in accordance with the strategic aim. Finally, it is argued that strategy guides and tactics influence strategy. While tactics form the 'cutting edge of strategy', tactics are always subordinate to strategy. The strategic estimate has, therefore, to take tactical considerations into account in order that the strategic decision is accomplished with the tactical capabilities available. The estimate has further to take into account the relationships between strategy, tactics and logistics and ensure that strategy tactics, and logistics are understood properly in their inter-relationship.

Some military theoreticians believe that tactics is merely common sense. However, throughout the period of history common-sense, unfortified by learning and practical experience, has never proved adequate. If there had been any such thing as a born genius, there would hardly have been any necessity of trained tacticians, saturated in the meaning and purpose, significance and importance, of such terms as 'Critical Terrain; Flanking Position', 'Indirect Approach', 'Economy of Force', 'Annihilation', 'Principle of Surprise', and a host of others. Actually, it has been of paramount importance that a man who hopes to practice the demanding art of High Command must ponder over the entire range of related matters repeatedly and in all the changing contexts. It is because human conflict always takes new and equivocal forms that confuse men of moderate mental power. Tacticians must always be learning, widening his cope and building himself up into what the Soviet have called "master of the operational art."

 WITH BEST COMPLIMENTS

FROM

PHONE:

3 7 0 3 7 5

**ZENITH TIN WORKS
PRIVATE LIMITED**
CLERK ROAD, MAHALAXMI,
BOMBAY-34.

MANUFACTURERS OF

● PLAIN AND LITHOGRAPHED GENERAL PURPOSE CONTAINERS ● OPEN
TOP SANITARY CANS ● RIGID CONTAINERS ● FANCY TRAYS ●
DISPLAY BOARDS ● COLLAPSIBLE TUBES ● PILLER PROOF/ROLL-ON
CAPS.

WHEN YOU THINK OF PAPER

● FOR PRINTING ● FOR WRITING ● FOR PACKING OR
FOR ANY OTHER PURPOSE.

THINK OF

“THE BISON BRAND PAPER”

THE SYMBOL OF QUALITY IN WHATEVER THAT IS PAPER.

WE MANUFACTURE

THE FINEST QUALITIES OF PAPER, EXCELLENT IN COMPOSITION, FROM
OUR MOST MODERN PLANT AND HAVE SERVED THE NATION FOR OVER
33 YEARS THUS BY PRODUCING THE FINEST OF THE PRINTING, WRITING
AND PACKING PAPERS.

OUR POPULAR VARIETIES

● BONDS (in white and colour) ● AZURELAIDS
● GREAMWOVE ● M. G. KRAFTS

THE MYSORE PAPER MILLS LIMITED.

Registered Office:

Aruna Mansions, 78/1, Jayachamarajendra Road,
Post Box No. 831, BANGALORE.
Phone: 24856 Grams: PAPERMILL

Factory:

Bhadravati (S. Rly)

LOGISTICS

18434

LIKE strategy and tactics, military theorists have not been able to confine logistics within the bounds of a single, precise and all inclusive definition. A number of definitions have, however, emerged out of the debates on the subject in recent years. Each definition has pre-supposed a specific point of view. In its broadest sense the term logistics has been defined as the art or science, or complex combination of both, of sustained support of weapons and forces to be tactically deployed to attain strategic objectives. As such, the term signifies the total process by which the resources of a nation, material and human, are mobilised and directed towards the attainment of military ends. Logistic support has been considered, an integral part of the function. In its importance in the four phases of the war effort...it has been placed as the immediate next to the preparatory phase. The other two phases, the manauver and weapons phases follow and seldom if ever precede. The nature of the logistic phase is simple it comprehends the movement of those instruments and instrumentalities of destructive force which otherwise would not express themselves effectively upto the areas where they would be required to do so, or conversely, their movement from those areas of expression for use elsewhere or to avoid the realisation of their vulnerabilities.

MAJOR CONCEPTS :—Three major concepts of logistics influence many of the arguments concerning national defence. The first considers it to be a nebulous sort of catchall, a convenient term useful to apply to something one does not wish to be bothered with but that nevertheless must be done. Those who hold to this concept frequently use either 'administration' or 'management' to apply to the problems of creating and supporting weapons and forces that are needed. Many of these persons also consider that 'logistics' and 'Supply' are synonymous. Some others feel that 'Operations' and 'Logistics' are separate. There are still others who feel that there is also a distinction between what is 'military' and what is 'Logistics.' The second concept considers that logistics includes practically all of war except combat operations, that it is so important that it should be completely centralised into one single logistic service that would provide all logistic support to the other services or branches and will have its own uniform list. Some hold that it should be entirely civilian. Some would have it both civilian and military. The third concept recognises the vast size and importance of logistic, but considers that it is so pervasive and so intimately related to combat that it should be considered a function of command. The essence of this concept is that 'logistics' is the bridge between the national economy and tactical operation of the combat forces. This has the implication that the nature of logistics changes as one moves from its economic industrial base to the combat area and, therefore, its organisation and control similarly should change in order to maintain the essential harmony with its natural environments.

KEY TO UNDERSTANDING :—Logistics can be understood only in relation to the end it serves on the one hand and the sources from which springs on the other. Logistics may well be called military economics. However, logistics and economics are not synonymous. Logistics use many of the principles of management and yet logistics and management are not the same. The relationship between logistics, management and command can be expressed in a single sentence. 'Logistics is a function of command, whereas management is one of the tools used by command to perform its logistic function. Thus logistics is not wholly economics nor is it wholly management, as these terms are understood in business and academic worlds. There are many important, if subtle differences. However, logistics blends both these subjects with special elements of military command'.

THE LOGISTIC PROCESS:—Broadly speaking, logistic process is the means whereby the raw making capacity of a nation is translated into the instruments of force ready to be employed in the pursuit of strategical or tactical objectives. Although wholly concerned with military, it is both a military and a civilian task. At their sources, the elements of logistic support are produced and procured through means which are wholly economic, commercial and civilian in character. Progressively, however, as the elements move through the logistic system, from farms or factories to the beach-head or battle fields, the process by which they are made available for consumption by the military, become more and more military in character. The whole process is conditioned by military ends and takes its form from the nature of the military tasks to be performed. In no sense, in no phase of it, it is a normal economic or commercial undertaking. However, it is carried on in the wholly unnatural environments of war, which in modern times tends to infiltrate into the total life of nations.

THE VITAL ROLE:—The vital role of logistics is to bridge the gap between two normally alien spheres of activity and blend them both to the needs of military objectives. On the one hand, the role of logistics is to bring home to the producer the needs of the military command. On the other, it is to infuse into the calculations of the strategists the exact appreciation of the limits of the materially possible. As the link between the war front and the home front, the logistic process is at once the military element in a nation's economy and economic element in its military operations. It is the measure of blending and coherence within the process that will ultimately determine the successful or otherwise, articulation of the productive and military efforts of a nation at war. This clearly establishes the concept that logistics is the bridge between the economy of the nation and the strategic and tactical operations of the combat forces. In this context, logistic process has to be in harmony, both with the economic system of the nation and with the strategical and tactical concepts and environments of the combat forces. Any lag or discrepancy in this regard will open up the nation to vulnerabilities, whatever the instruments of force in being otherwise, and will even bring about defeat without the battle having been joined.

PRODUCER CONSUMER LOGISTICS:—Logistics are considered in two general phases...the **producer logistics and consumer logistics**. Producer logistics deals with the beginning of logistics in the national economy. It starts with the material and human resources of the nation in their economic environments by a process which is largely **business management and control**. It creates weapons, equipments, supplies, services and trained personnel that become the organised combat and supporting units of the armed forces. As against this, the consumer logistic process is the means of converting the weapons, equipment and other elements of supplies produced by the economics, business and industrial action of the producer logistics into complex organised military installations and combat and supporting units and then of employing the logistics sources and units so created and mobilised into the actual operating support of the combat units. In order to give optimum results, these units have to be in harmony and accord with the strategical and tactical concepts of the combat forces and the environments under which they may happen to be employed to gain the overall military objectives. To be exact, the purpose of the consumer logistics is to provide for the continued support of the combat units in such a manner as to ensure the sustained combat effectiveness under most hazardous and destructive conditions of active combat.

THE BLENDING AND OVERLAPPING:—For the sake of convenience and better understanding of the entire logistic process it is sub-divided into **Producer and Consumer logistic processes**. However, the two cannot be water-tight compart-

ments excluding all blending and overlapping. This is evidenced from the fact that producer logistic is a civilian activity with important military participation and consumer logistic is primarily a military activity with important civilian participation. Hitherto, the blending and overlapping was claimed to occur only in the mid-section of the logistic bridge. It was because at the beginning, in the roots of the economy, it was entirely civilian and in its ultimate end of actual combat, it was entirely military. The position has changed very considerably with the civilian authority appearing every where and playing its dominant and directional role even in the matter of defining the nature, character, extent and intensity of military operations and fixing the levels of command and decision.

'Just as there are two blending and overlapping phases producer and consumer, there are three blending and overlapping elements of logistics, **determination, procurement and distribution**. Here again the line of demarcation is increasingly blurred and leaves greater area of action by the civilian. Despite the fact that consumer is still the military machine, the determination of requirements is no longer an exclusively military responsibility. The vital fact in determination which gives wider role to the civilian authority is 'the determination of what the country can afford with the risks that the country is willing to take'. The military machine is no longer in a position to set the limits of 'what the country must afford and the risks it must take,' as one of the fundamental elements of logistics, procurement is of vital importance. However, as does logistics itself, procurement has many aspects and at times, it is difficult to identify the concepts that are most significant. Distribution is the process of receiving from the producer and delivering to the consumer. The blend here is of-course civil and military cognisance. However, scales of power, authority and participation are heavily weighed in favour of the civilian. Apart and aside of the blending and overlapping between the civilian and the military, the elements of logistics have further blending and overlapping within the military level of command and decision. For instance, what may be, the requirement and procurement problem for the theatre commander, may only be a distribution problem at the higher level say Ministerial level, where the requirements of several claimants would be put together on a longer range basis. Through the lower echelons of the theatre command, the same would be the position of the theatre commander.

THE DUAL NATURE:—Since logistic process changes, both its nature and its administration, as it moves its resources in the national economy to the fulfilment of its purpose in the effective operations of the combat units, it has an inherently dual nature. The essential duality of character, not only requires a shifting blend of civil and military authority, also a duality of criteria of judgement as to the effects of policies and decisions. This brings into force the vital need for understanding and keen sense of mutual responsibility between the civilian, who have primarily producer responsibility and the military who have primarily consumer responsibility. In addition, there has to be a sense of special reciprocal responsibility. In other words, when authority is assumed by a civilian, it must carry with it the obligation to develop and understand of the combat forces. In this context, it would not be sufficient merely to assume that a supposed economic benefit will automatically produce military benefit. Similarly, high military commanders have to be keenly aware that good business management permeate the entire logistic structure. Furthermore, at times, economic considerations may outweigh military considerations. All those who deal with logistics have, therefore, to think both of business efficiency and the combat effectiveness of operational units at the time of active combat. By reason of this duality, the shifting emphasis and influence and the vital importance of the issues at stake, the problems of logistic policy and decision, require the highest intellectual capacity, professional judgement and moral character.

DYNAMIC GROWTH

Dynamic Growth is the corporate objective of Ramon & Demm.

- **Ramon & Demm** are the leaders in automobile engineering industry in India.
- **This sound corporate character** permeates through every product of Ramon & Demm conforming to the highest standards.
- **Ramon & Demm Gears** are the original equipment for Leyland Chassis, Escorts Tractors, Escorts Fort Tractors, API 3-Wheelers, and Jeeps.
- **For the replacements Spare parts market**, Ramon & Demm manufacture gears for TMB, Bedford and Jeeps.
- **Ramon & Demm** are always on the road—the long road leading to progress and prosperity.



RAMON & DEMM LIMITED

Regd. Office: 79, Bombay Samachar Street (Apollo Street) Bombay-I.

Phone: 256246 (3 lines)

Telex: 2661 "RAMON"

Work & Adm. Office: S. V. Road, Thana, Phones: 592483/4

Telex: 2382 "RAMON"

*With Best Compliments
From*

SAVITA CHEMICALS PRIVATE LIMITED

231, Dadabhoy Naoroji Road, BOMBAY - 1

Phones : 265446 ; 263807

Manufacturers of :

- LIQUID PARAFFIN, ● HEAVY, ● LIGHT, ● BP/USP,
- HYDRAULIC BRAKE FLUID, ● SOLUBLE CUTTING OIL, ● PETROLEUM SULFONATES, ETC.

LOGISTICS PRINCIPLES :—

THERE are two types of logistic principles of cause and effect...those that generally apply to all logistics activities and those that apply primarily to a single tactical aspect. The later are very numerous and are generally not categorised. However, the former are considered very pertinent to the understanding of the concepts of logistics and to the development of professional judgement in command. While these principles apply to all logistic situations, they are particularly important in dealing with fluid or fast moving combat situations. Any lack of understanding and therefore, any discrepancy in application, instead of strengthening the elements of power, will only create vulnerabilities and ultimately defeat the entire war effort. Apart and aside of the principle of Snow ball, which is considered a class by itself and fundamental to the very understanding of the logistic process, there are in all ten generally accepted logistic principles. However, following are the more important (a) Logistic Discipline, (b) Limitations and Resources (c) Under Plan-Over plan Sequence, (d) Logistic Reserves, (e) Priorities and, Allocations, (f) Flexibility and Momentum and (g) Command and Control of Logistics.

THE SNOWBALL PRINCIPLE :—In the United States of America, the principles of Snowball is considered the most important. Hitherto literature on military thinking in the Soviet Union has been rather scarce. This situation is very likely to improve with the signing of Indo-Soviet Treaty of Friendship, and mutual co-operation leading to progressive integration of military thinking in the two countries. However, it can be safely presumed that the Soviets attach the same importance. The principle states that all logistic activity tend to grow to inordinate size unless positive and effective control is maintained at all steps and at all levels. In the absence of control, the growth continues until like a ball of wet snow, a huge accumulation of slugh obscures the hard core of essential combat support and the mass becomes unmanageable. This Snowball effect permeates the entire structure of military organisations and effort. It applies both to personnel and material. It also becomes interacting and regenerative. The regenerative Snowball process stimulates monetary inflation, which in turn increases the cost of other programme and tends to make the war effort beyond economic capabilities. Its worst effects are seen in overseas operations. The indirect effect spreads throughout the entire military system by increasing every functional element of logistics.

The Snowball principle is perhaps the most important single factor in military waste. Its direct effects are great, its indirect effects are even greater. One of its most important effects is twofold. The obvious complication of the task creates a demand for more men to deal with it and good men are hard to find. Soon executive attention is diverted to non-essentials and the system becomes more and more sluggish. The second effect is to create sense of frustration, which in turn reduces personal efficiency and further stimulates the 'Snowball'. The overall effect of the uncontrolled Snowball Principle is similar to the concept of chained reaction and to Parkinson's Law. In overall defence matters, it becomes particularly evident in the shape and form of 'Crash Programmes'. The term 'Crash Programme' is derived from two semantic illusions. 'Crash' the illusion comes from the term used a little over thirty years ago to describe the quick dive of a submarine. Such a quick crash dive required the most meticulous preparation, training and discipline and prior inspection. It is not known how it happened. In the matter of logistic process, the crash began to connote haste, excitement and confusion, instead of cool, claim calculated and disciplined speed that was actually required. It is strange and intri-

guing that most of the romantic writers and most leaders of public thought and opinion aspiring for power and influence, have continued to keep the term with meaning and purpose just the contrary to actually required, clasped to their collective bosoms and have given to this meaning and purpose the status of accepted phraseology. The second illusion comes from the odour of sanctity that now appears to emanate from the term **programme**. While the science of programming is very important and has advanced rapidly in recent years, too many persons seem to feel that establishing a programme solves all problems. Obviously, some emergency programmes have been necessary and will continue to be necessary. Such Programmes will, however, always need a true understanding of the cost and consequences...An understanding in the context of the true nature and character of logistics and its relations to strategy and tactics. Such an understanding would be possible only by a combination of experience, study and meditation, instead of haphazard actions. In other words, a vast variety of attributes would be required, the most important being wisdom, creative appreciation, a feel for the art of military command, and finally professional competence capable of mastering technical specialities and using them as the foundation for developing the capability of exercising broad command.

LOGISTIC DISCIPLINE:—The term has not yet been defined exactly. However, application of **logistic discipline** has been recognised as the very foundation of all control of the Snowball Principle. It has further been conceded that logistic discipline, while closely related to general military discipline and supply discipline is more specific than the former and more general than the latter. In order to understand and enforce logistic discipline, military commanders have to understand the importance, the complexities and general techniques of logistics. They have also to ensure that the directives, instructions and standing operational procedures used to transmit logistical instructions are issued and obeyed like commands. For instance, to ignore an order because it would require the commander to leave behind the equipment which he may feel, would be needed in the coming battle, would be as much an invitation to defeat as the failure to take up combat positions directed by the field commander because they are considered too dangerous.

LOGISTIC RESOURCES:—It may sound flamboyant and alien, but it is a fact that, whatever the efforts put in, logistic resources always remain limited. Experience has shown that never all logistic requirements have been satisfied in exact balance required. What has been true in the past will remain true in the coming future. And as long as this remains true, some phase of logistic phase will always remain a limiting factor. However, it has never and it will not serve any useful purpose to, isolate and single out any one element of logistics and show that, it would limit the scope of possible military operations, unless it is also shown that all other logistical requirements could have been met to support the operations in question. Therefore, the question of the most effective balance between combat and logistic forces will always remain of vital importance to all military commanders and military planners. In resolving these conflicting claims, it will always have to be remembered that sustained combat effectiveness, not sheer size, should be the proper objective of logistic effort. In the working of the concepts of the exasperating principle of limitations and balance, there will always be urgent need of strategic, tactical and logistic flexibility.

THE UNDERPLAN OVER-PLAN SEQUENCE:—This is yet another corporately inefficient but psychologically understandable principle which has to be taken into active consideration at all times and in all situations. A rational and realistic balance has to be struck if the war effort has to move to the realisation of the national objectives. It has further to be borne in mind that the principle is not limited to logistic matters only. It so happens that the general ignorance of the logistic principles leads to the frequent occurrence of the underplan over-plan sequences.

For instance, if in the critical stages of an operation any critical logistic element is seriously under-estimated or underplanned, this very element would be over provided in the latter stages. In other words, initial underplanning will cause eventual over planning which so frequently causes the monstrosity of crash programmes, invariably doing more harm than good.

PRIORITIES AND ALLOCATIONS:—The word 'Priorities' has been defined as 'precedence in time, order or importance'. It has also been defined as the right to precedence in obtaining certain commodities or services or the order of granting such right. The dictionary meaning of the word appears to be clear and simple. However, this is not the case when taken in the context of military operations. Wartime experiences have shown that, with few exceptions, a precedence system of the order or importance, that relies only on the use of numbered priorities is futile and self defeating. However, priorities are established, to deal with logistic situations where the demand for a commodity or service exceeds supply. When no scarcity exists, priorities are not needed and, therefore, are not established.

Priorities can be **single band**, which make no distinction, or they can be **multiple band**, which may become very complex. This evolution points up the great difficulty in relying on a system of priorities alone for judging supplies to vital production. In practice, the method works fine until a material proportion of the capacity for producing a scarce item is thus ordered. At that time, individual manufacturers with priorities begin to experience difficulty in locating supplies to which to apply their priorities. There, then comes a time when a priority becomes merely a hunting license which permits the holder to go out and find the necessary items, if possible. This difficulty stems from the fact that priorities take no account of the supply of materials available in the market and thus fail when absolute scarcities begin to develop. Under the circumstances, it becomes necessary to allocate available supplies of selected commodities. The initiation of the allocation system only supplements priorities system. However, allocations necessitate much more administrative effort than priorities. They involve a continuous close knowledge of supply of the commodity allocated and also require both knowledge and judgement concerning essential civilian demand. However, whatever the complexities in the matter of priorities and allocations there are few points which must always be borne in mind. They are:

(a) The word priorities should not be used alone unless its precise meaning in the context for the specific discussion has been clearly established, (b) Priorities are useful only when they are associated with specific allocations or in certain cases with specific time schedule, (c) Allocations and priorities always imply or reflect judgements as to their military value. The wise use of allocations and priorities is essential to the development of weapons and force structure of the defence system at every level and area, (d) The right to allocate resources and to establish and administer priorities is a vital element of command control of logistics, regardless of the nature of blending of the civilian or military elements and areas of command.

INFORMATION:—The problem of priorities and allocations naturally leads to the problem of information which permeates the whole discussion of logistic principles and of military decision action. While information and intelligence are not synonymous, there is a considerable overlap. The whole problem of command and decision revolves around the two essentials of 'objectives' and 'information'. The control of logistic process, either at the top level of requirements or procurement or at the field level of requirements and distribution, is wholly dependent upon accurate timely information as to the location and availability of resource. Unfortunately

modern logistics is so vast in its details that it is easy for man or office to be swamped. Therefore, great discrimination is required to judge that information is needed at various levels and areas of logistic authority.

FLEXIBILITY AND MOMENTUM:—It is the fundamental principle of logistic process that command transforms war potential into combat power by its use of the logistic process. However, it is always a flexible logistic system that can form the physical foundation for tactical and strategic flexibility. From this flows the vital importance of the **Principle of Flexibility and Momentum**. In order to translate the principle to reality, each command has first to determine what kind of logistic decisions it must take in order to ensure that the logistic support of its forces is responsive to its strategical and tactical needs. It must also determine the nature and degree of aggregation it would need to ensure full integration of strategical, logistic and tactical planning factors appropriate to the nature and responsibilities of command. Finally, each command must have the information necessary to carry out whatever direct responsibility it has to conduct logistic support operation. In the ultimate analysis, it must apply the sound principle of '**management by exception**' to the question of information. Each command must learn, either by experience or by analysis, which of the myriad elements of logistics information are significant to its own tasks and which are either trivial or insignificant. No universal formulae or pre-conceived plan can solve this problem. Ultimately, it has to be a matter of professional judgement and care for the analysis of situation.

FEASIBILITY:—The term **feasibility** in the logistic context does not appear to have been put within the bounds of a single all inclusive definition. However, it has been emphasised that it is very important to understand '**military value**' and '**combat effectiveness**', the two concepts with the further important implications as to calculated risk and logistic feasibility. These two terms are closely related since they are integral and vital parts of the larger concept of '**sound military decision**.' All these terms have been frequently misunderstood and misused. Military discussions, hitherto held, have frequently stated or implied that the logistic feasibility of an operation or plan is determined by the logistic division of the staff or by a logistic commander. However, this has been considered an erroneous concept setting the stage for many further errors. In an attempt to bring nearer to exactness, it has been conceded that feasibility and the calculation of risk are the duty and prerogative of the commander and in fact these can belong to no one else. Logistic feasibility is, therefore, the personal decision of the commander as to the degree of hardship and risk that he is willing to impose upon his sub-ordinate forces in order to accomplish his tactical and strategical objectives. Essential pre-requisites in this regard are that the interplay in the mind of the commander of **objectives, strategic, logistic, tactics and intelligence**, should be such that the feasibility of any plan or strategic concept is evaluated on the basis of the tactical and logistic information as related to intelligence. In his appraisal, he must have a clear knowledge of his requirements and the degree to which the resources at his disposal fall short of these estimates.

COMMAND CONTROL OF LOGISTICS:—The question of '**command control of logistics**' has been debated for many years without ever being permanently settled. While a good part of uncertainty has come from different concepts of command, most of the difficulty seems to have come from different concepts of logistics itself. These two understandable factors have been further complicated by the common desire to reach clear cut, final decisions what can be drawn on organisational charts, placed in operating manuals and thereafter to be forgotten or to be automatically handled. However, it has been considered generally sound that any commander

should have the same control over the logistic forces and resources allocated to his use as he has over the combat forces allocated. However, difficulty is that the flow of logistic resources and combat replacements have necessarily to be regulated both at the producing end and at the receiving end. This inevitably leads to the contention that the control will have to be dual responsibility. Therefore, in all situations it becomes the clear responsibility of a superior commander to ensure that the system of logistic control he establishes among his subordinate commands recognises the inherent nature and importance of this duality and provides for harmony.

This responsibility to establish harmony is an urgent duty of command regardless of the command level, or of the balance of blending of civilian authority in the command level, or of the balance of blending of civilian authority in the command structure. A few more points will have to be borne in mind by the commander. If a commander does not understand the logistic principles or if he does not have adequate logistic information, he will be dominated by logistic limitations. If on the other hand, he has his logistic understanding and capability, he will always get the most out of his 'even limited resources'. Since logistics will always limit strategy and operations, and since when one logistic limitation is overcome, another will take its place, a commander must always be aware of the logistic factors exercising their limiting influence in any particular strategic or operational plan he is carrying out or contemplating. However, while committed to this task the commanders, should not become obsessed with logistic limitations.

Logistics is after all a bridge between the economy and operations of the combat forces. As such, it is always divided between civil and military authority, almost all the time overlapping each other. However, it is the requirements, procurement and distribution problem in which there will always be an overlap authority that will vary according to circumstances. The responsibility and custody will shift as the flow of support passes from one segment or level of the logistic system to another. Under the circumstances, therefore, the design, the command and employment of logistic forces should be based on an understanding of these concepts and relations. The design, command and employment should provide an appropriate balance between the various functional units that in toto comprise operation. Finally, these command relations and the support responsibilities of other commands, should be specifically planned so that the full combat potential of the combat units is fully developed and maintained. It, therefore, follows that the authority to exercise command control of logistics carries with it the equally important reciprocal obligation to exercise competence, sound judgement and restraint in the exercise of that control. This reciprocal obligation of competence in the exercise of control of logistics will apply regardless of the level of centralisation or the civil-military composition of the controlling authority. It will have to be borne in mind that the mind of civilian command is concerned primarily with the economic influences and limitations. The mind of military command is primarily, concerned with the operational logistic influences and limitations. Both, civilian and military commanders will, therefore, have to be aware of these influences and limitations and will have to understand the shifting relations in the exercise of control in a modern conflict. It is not yet fully realised. However, it is vital that the civilians exercising command control of logistics must remain in office long enough to apply the experience that is so costly for them to acquire. They must study the art of war in order to learn the relationship and purposes of the various elements of war. If they do not understand the nature of human conflict and the nature and principles of combat effectiveness, their exercise of power may well bring national disasters.

WITH THE
COMPLIMENTS
OF

THE RUBY MILLS LIMITED

LADY JAMSHEDJI ROAD,
DADAR, BOMBAY-28. DD

MANUFACTURERS OF

- TERY/COT SUITINGS AND SHIRTINGS
- COMBED LONG CLOTH
- AND
- WASH AND WEARCOATINGS.

SALES DEPARTMENT

THE RUBY MILLS LIMITED

DHARARAJ GALI, M. S. MARKET,
BOMBAY-2

CHAPTER IV

COMMAND AND DECISION

.... GENERAL, SOVIET AND CHINESE CONCEPTS

COMMAND AND DECISION, between themselves define the nature and character of war, size, strength and equipment of the armed forces, the extent and intensity of military operations and ultimately determine and decide the very outcome of war. Nothing is, therefore, of greater importance to the proper understanding of modern war than the understanding of the nature and character of command and decision and the process in which they are exercised and executed.

The word command has been defined in a number of ways, depending upon the terms of reference and parts of speech employed. However, in the usual and generally accepted military parlance, the 'verb' command has been defined 'to direct authoritatively' 'or to have control of it'. The 'noun' command has also been defined in terms of authority or has been used to indicate military force or installation. In any case, no matter how the word has been defined, the emphasis has been on authority. It is the awesome dominance of authority and the question of life and death of millions of people which has always been associated with military command. These two factors have always been in the thinking of those who have been called upon to command armed forces in war. The process of reaching a sound decision and developing good plans to carry it out has been defined as an art. Like all arts, it is based on science, except in those rare cases; where there is true genius.

Even earlier, the art, the concepts and the philosophy of command involved the interweaving aspects of decision and concepts of organisation... command, decision and organisation being parts of each other, no one could be understood fully by it-self. The nature and character of command in the context of modern war has become a part of much wider concept...a deeper blend of civilian and military professionals, between executives and staff assistants, between commanders and staffs and between business managers and combat commanders.

IN THE GLASS

OF FASHION

Exclusive 19
Sizes 5-10
Rs 46.95

Exclusive 32
Sizes 5-10
Rs 46.95

Here is Bata Exclusive designed especially for young men who insist on real foot comfort and step-ahead styling. They are fashioned of selected, supple leathers; the famous Exclusive construction gives them a lightfooted flexibility second to none. Visit your nearby Bata Store today and sample a pair.

Bata

COMMAND IN MODERN WAR:—Modern war is no longer a mere and formal clash of covert armed forces with a beginning and an end...with a victor and vanquished. Instead, it has become the whole spectrum of continuum of human conflict with deep overlappings and changes in areas and aspects. The purpose of a nation in modern war is not merely to win...for victory in its old and absolute sense has ceased to have its original meaning and purpose. The purpose of engaging in a modern conflict has become the **attainment of political objectives**. The problem of the effective use of power and force has come to require deep blend of political and military wisdom and courage. Further, there is no longer a real distinction between peace and war. Instead, there is a continuing interplay of threat and counter-threat with varying uses of tools and weapons of conflict, including both of covert and overt military forces, subversion, sabotage, insurgency, mob violence and terrorism **see also 'Guerrilla Warfare'**). Whenever, either by tacit consent or by formal agreement, one of the tools of conflict is limited in use, the importance of the other tools increases...unless at the same time, the opposing nations modify their objectives.

The changed nature and character of war and conflict has brought about deep and far-reaching changes in the very concept and practice of command and decision and the scope and jurisdiction of the civilian authority vis a vis the same. There has emerged blending and overlapping almost at every stage and it has become difficult to pin-point where one ends and the other begins. According to the latest thinking on the subject, following are the areas of blending and overlapping by the civil and military authority, (a) In peace or cold war, the major intertwined areas of decision that must blend civil and military authority are national strategy, military budget, force structure, force organisation and logistics. (b) In limited war, the power has to be exercised in such a manner as to reduce the likelihood of escalation into unlimited war. In limited war, therefore, blending of civil and military authority will take place at the national command centre, at the theatre command centre and in the field of producer logistics. (c) In a thermo-nuclear war, the blending will be most important and most difficult in command control centres would be established to control the logistics of recuperation and exercise of martial law. (d) In guerrilla and subversive action, the civilian authority will enter into the very heart of all major decision and to a large extent into the actual operations of the military.

Under these circumstances, therefore, the military commander has to be prepared at all times to use appropriate authority. At times, the political authority may impose irksome and seemingly arbitrary restrictions on the use of weapons by the military commanders and on their freedom of action. Undoubtedly, this will create special problems for the men in actual command of the operating forces engaged in combat. However, the military commanders will still have to take the life and death decisions. They will still have to maintain morale and combat **elan** in their men, while accepting the tactical restraints and, perhaps severe tactical defeats, imposed by political considerations. This situation will invariably create the need for a very special unity of concept and sense of mutual and reciprocal responsibility between the combat commanders and political superiors. At the same time, while that the vital politico-military considerations operate, they would be further complicated by the need for good business management of military affairs. It will therefore, becomes obvious that military command in the context of modern war would be a deep blend of civilian and military professionals. The very size of the task frequently exercising actual command because the work would become too vast and too complex to be performed by a single chain of pure command.

COMMAND AND MANAGEMENT:—Throughout the period of history, there has existed confusion between and blurring of the meaning and purpose of command and the meaning and purpose of management. Despite repeated and emphatic clarifications by military theoreticians, particularly in recent years, the confusion and blurring has, not only continued, but has shown pronounced tendency to be ever mounting. Whatever has been said and done in recent years to draw a line of demarcation between the natural and legitimate meaning, purpose and environments of command and management, not all concerned have yet fully accepted that military management (if at all it may be called so) and civilian management are not synonymous in the conventional sense. The basic and fundamental differences between the two become immediately clear when it is realised and recognised that command essentially involves authority. As against this, management, defined as a process of employing resources of men, money and material to accomplish pre-determined tasks and objectives as a function of getting things done through others, does not. Yet another vital point which makes the context clear and unambiguous is that, in military command, the criteria is war versus peace, victory versus defeat and freedom versus slavery. In the context of modern war, survival versus total extinction. As against this, the criteria in management is money, in terms of sales, in terms of cost, in terms of production units and in terms of profits and losses. The military manager, if he may be called so, is unique in as much as he has to perform with only spartan economy, but his profits and losses are measured in the facts of war and peace, victory or defeat, life and death of the entire mass of people in the warring countries.

The above are of course the fundamental differences between command and management. However, there are some axiomatic similarities in the environments and exact duplication in the methods and procedures of both. In a way and to an extent, there is a close kinship between the two. For instance, command has to understand the basic principles and functions of management. It has also to ensure that good management permeates the entire military structure. Military command has also to understand that command and management meet, overlap and blend most in the field of logistics. Command and management qualities are put to their severest test when it is realised and recognised that logistics are both the military element of national economy and economic element in military operations. Command and management, have, therefore, also to understand each other, particularly in the field of logistics, so that they can live together inspite of the facts of strict definition of their respective attributes and areas of cognisance.

THE CENTRAL PROBLEMS:—The major difficulty in organising national military system is found in three central and overlapping problems. These problems are, the **political problem**, the **business management problem** and the **military problem**. The political problem, which is all dominating and dictating in the context of modern war, is to ensure that the action of the military forces serve the political purpose of the nation. In order to permit this efficiently and effectively, military command must yield to a very large extent to the civilian in the exercise of positive control. However, reciprocally, the civilian politician will have to yield much to the superior professional knowledge of the managers and of the combat commanders. Thus, the political problem would involve two subsidiary problems.....that of **centralisation versus de-centralisation**, and that of civilian versus military authority at the various levels and areas of command. The business management problem is to ensure that the business affairs of the military organisation are so efficiently conducted that a satisfactory defence is created and maintained within the limitations imposed by the economic capabilities of the nation. At the same time, business management has to be subordinated to the political requirements of the Government and society. It also has to provide a military system that can be efficiently employed in combat under the com-

the Head of the State, and the Parliament, representing the entire mass of people, to appoint trained officers based solely on judgement as to what they can do professionally, rather than on political grounds. As a consequence, in times of war, or great national emergencies, both the parliament and the people can trust the military implicitly and can turn to military services for men who would be above party politics and who, as professional military officers, would serve no faction and no special cause of political advantage. However, this will not deny to the professional military officers their primary function, apart from their obvious administrative staff and command responsibilities, of advising on military policies and of preparing detailed strategic plans as a part of the specialised advice from which overall national policies can be evolved.

THE MILITARY MIND:—It has since been the main argument of political leaders that the question of civilian supremacy in policy matters involves several inter-wined general topics. The most important of these are ; (a) The competence of military men to deal with matters of high policy ; (b) The appropriateness of military men exercising responsibility in national and foreign policy matters ; (c) The special requirements of knowledge and character imposed on the civilians who assume authority in foreign policy ; (d) Recognition that, while intellectual confirmity may facilitate administration, it will also inevitably produce mediocrity. While discussing these and other related topics, scholars and political writers have shown pronounced tendency to complain that military men are generally not sufficiently flexible, particularly in the matters of foreign policy. They have also complained that, since military men are generally not directly responsible to the electorate, they lack sensitivity to public opinion. This has led to general discussion on what has come to be known as the 'military mind'.

There have since emerged quite typical interpretations of what is meant by 'military mind'. The quotations seem to imply a combination of qualities which allegedly justify a severe indictment of the intellectual capabilities of the professional soldiers. These qualities have presumably been attributed to training, traditions, experience, the nature of military techniques and objective and career membership in highly bureaucratic organisation. Concern over the nature of military mind has increased, so naturally has the opportunity for this type of thinking to shape foreign policy. However, the most serious criticism of the military mind has since appeared to be the tendencies towards ; (a) Rigidity in thought and problem analysis. The rejection of new ideas and reliance on traditions rather than lessons learnt from experience ; (b) An authoritarian approach to all non-military factors in military relationships ; (c) An authoritarian approach to most social issues and situations accompanied by disrespect and disregard of the civilian authority, (d) Insulation from non-military knowledge and anything beyond what is narrowly defined as militarily relevant and (e) Judgement of policy goals and techniques primarily in terms of military force and military strategy.

Many indeed have been the advantages cited of the civilian control of the military. However, the entire recitation has not been without objections. It has been argued that the civilian control of the military can be unwisely exercised and this can lead to national disasters in times of war. It has also been argued that if the civilian attempt to handle the tactical details of military operations, the military system itself will ultimately become ineffective. The real danger would be that, in the name of the civilian control, the command systems will tend to be more centralised and will, in consequence, defeat the very purpose for which they are created...responsible and competent performance of difficult, dangerous and high professional tasks. In order to help maintain the professional

dignity, operational efficiency and morale of the military, political authorities themselves will have to possess a mature understanding of military factors and decisions. On the part of the military commanders in this context, they will have also to gain a keen appreciation of political factors. In the resolution of these difficulties they will have to make all reciprocal and responsible efforts to seek a blend of mutual responsibilities, without prejudice to the professional competence in their respective field and levels of command. Ultimately, there will have to emerge mutual respect and reciprocal recognition of these areas of competence and authority. These are the basic elements of mutual loyalty without which no military organisation would function for long, at least under democratic regimes.

It has been argued that; (a) The technological explosion has increased the scope and power of civilian influence in military affairs. As technology has advanced, military men have tended to improve their scientific and technical education, yet they have to be more and more dependent upon civilian scientists and techniques. (b) As centralisation of authority has increased, the permanent civilian staff of the Departments of Defence and of Services has, even grown to acquire the privileges approximating to Flag Officers. (c) The more civilian authority has grown, the more important it has become to have a high quality and relative permanence in the high and supergrade civil servants. (d) The more officers have become involved in the semi-political activities of a national head-quarters, the more difficult it has become for them to retain the sense of objectivity and professionalism. Under the circumstances, it has become increasingly difficult to retain distinction between political and military factors.

INSTITUTIONALISATION:—In the hurly burly of peace time political contention, and in the face of the growth of bureaucracy, the terrible personal responsibility of command is frequently obscured by the authority given to controllers, budget officers, special assistants, committees and system managers. The process has been described as the 'institutionalisation of command'. The frequently stated purpose of setting up of such institutions has been to reduce ambiguities. Paradoxically, however, just the reverse appears to have been the actual experience. It has been argued that, as the command role becomes more highly institutionalised, various hazards develop, particularly in the matter of location of the exact responsibility. Since the establishment of new organisations and staffs do not necessarily change the concepts of power drives of individuals, these factors create both vagueness and ambiguity in many matters.

The institutions of command, as and when set up, have a life and activity of their own. It has been contended that, when the top political or military leaders become pre-occupied with affairs not directly related to the papers under action, the institutions of staff are deputed to study and arrive at conclusions which would reflect the basic concept and philosophy of the commander himself. However, experience has shown that these staffs and committees are very much prone to giving inadvertent or casual approval to such policies as may have implications beyond their deliberate intent. It has not been generalised. However, plans produced by the routine working of institutions and staff are generally not depended upon unless there is positive assurance that they reflect the basic concept and philosophy of the commander. Further, the staff planners and subordinate commanders have another limitation. The areas where political considerations are strong, the political authority may change his ideas gradually or swiftly, sometimes even without informing the subordinate planners. Further handicaps and hazards of the system are; (a) The more elaborate and institutionalised the planning groups become, the greater is the inertia of approved plans. This is particularly true in major logistical plans, where admitted mistakes and errors are accepted and are lived with by weary staff

members, who are generally reluctant to open up an approved plan to the lengthy and dreary rounds of obtaining bureaucratic approval of a change. (b) In the process of becoming an institution, command tends to raise the level of authority to make affirmative decision. It is generally conceded that an individual commander would be more clear in his delegation of authority than a group of staff officers or representatives, who may form institutions. (c) Officials working through such staff groups will, in effect, delegate authority to say 'no' more than to say 'yes'. Thus, the more command becomes an institution, the greater will be the level of centralisation of authority. This process will also cause the exercise of command to be cumbersome and so rigid that, in times of crisis, the process and the organisation will need 'being telescoped'.

CENTRALISATION VERSUS DECENTRALISATION:— Two apparently conflicting philosophies appear to have developed in the Departments of Defence throughout the world. On the one hand, there is the theory that economy and effectiveness are enhanced by great size. On the other hand, there is the experience that great size tends to produce sluggishness and delay. Advocates of great size and centralisation are those who believe that, it is necessary to ensure political control of military operation of the defence system. The advocates of decentralisation are those who believe that the economic co-operation of the system is complicated by the nature of logistics. The major factors to be considered in evaluating proposal for centralising authority in defence systems have been cited as; the objective to be sought, the criteria of judgement to be used, the theory and principles that apply, the factors of cause and effect, the specific factors known to cause waste, the influence of automation, the lessons of history, and experience of business. However, it has been put equally forcefully that centralised structures are conducive to the abuse of power and compounding mistakes. Monolithic structured organisations can kill imagination, stultify initiative completely, eliminate the effectiveness of the officer corps who have gained wisdom and experience. The cause, effects and consequences of, de-centralisation accordingly to Ralph Cordiner and Fleet Admiral Earnest J. King of the the US, are;

(1) De-centralisation places authority to make decisions at points as near as possible to where actions can take place. (2) De-centralisation is likely to get the best overall results by getting greatest and most directly applicable knowledge and most timely understanding actually into play on the greatest number of decisions. (3) De-centralisation works only if real authority is delegated, and not if details have to be reported or worse, if they have to be checked first. (4) De-centralisation acquires confidence only if the associates in de-centralised positions have the capacity to make sound decisions in the majority of the cases and such confidence starts at the executive level. (5) De-centralisation requires understanding that the main role of staff or services is the rendering of assistance and advice to the line operators through a relatively few inexperienced people, so that those making decisions can themselves make them correctly. (6) De-centralisation requires realisation that the natural aggregate of many individually sound decisions would be better for business and for the public than centrally planned and controlled decisions. (7) De-centralisation rests on the need to have general business, objectives, organisation, structure, relationships, politics and measurements known, understood and followed, but realising that definition of policy does not necessarily mean uniformity of methods of executing such policies in de-centralised operations. (8) De-centralisation can be achieved only when the higher executives realise that authority genuinely delegated to lower echelons can, in fact, also be retained by them. (9) De-centralisation will work only if responsibility, commensurate with decision making, is truly accepted and

exercised at all levels. (10) De-centralisation requires personnel policies based on measure performance, enforced standards, rewards for good performance and removal for incapacity or poor performance.

GENERAL STAFF SYSTEM:—The foundation of the General Staff concept lies in the assumption that goals can be achieved only by making them the responsibility of some office or officials. In addition to placing emphasis, which by some military commentators is considered undue, as the only means of achieving social goals, the notion implies other assumptions also. One is that, given the legal authority and sufficient resources, an office can accomplish objective, regardless of the magnitude of complexity of the task, regardless of counter forces which might thwart the effort. The other premise lying behind the attitude, which view organisation as the sole or primary means of achieving goals is that, decision making is confined to the formation of overall policy. To hold this premise is to consider declarations of policy as obvious, mutually consistent and readily acceptable by all. It means that once the top management decides the objectives, the matter of '**getting them done**' is routine process, readily deduced from the objectives themselves. The goal is considered given, developed through political process. The job of staff is to decide how the value of the goal is to be accomplished.

The General Staff takes its chances of success on the notion that, if any project is given enough top level direction, it just cannot dare fail. It believes that, every project or programme, must be minutely planned from the very beginning. If this is done, the future will hold no uncertainties. If it still does, they would be anticipated and treated as certainties. One of the basic faiths of the hierarchical General Staff system is that, there are no insoluble problems. Goals are viewed as puzzles for which there is only one right answer. The answer may not be obvious, but there is no doubt that it exists. If only enough analysis, thought and expertise are brought to bear on the goal, the problem will be solved and success achieved. To offset the tendency of isolating planning from the task of doing, Staff Agencies at the top of the pyramid usually develop some independent channels of communication with operating echelons. This relationship between General Staff and lower echelon staff agencies is usually called '**co-ordination**', so as to preserve the integrity of the **principle of Unity of Command**.

Some military commentators have referred to the principles upon which the General Staff system is based as **myths of staff work and proverbs of organisation**. They have included such assumptions as, staffs do the knowing, thinking, planning...line does the work. Staff cannot issue orders to the line officers. Staff prescribes methods...line decides when the act shall be performed. Anything specified, aside from major operating functions, is Staff. In spite of these principles, there is always an inherent conflict. It is because the functions largely overlap. The only way, '**doing**' can be distinguished from '**planning**' is to say that, doing never involves discretion. In the second instance, the staff must be able to justify its existence. As and when it gets involved in '**doing**', the line would challenge it as undermining its authority. To say that Staff does not exercise authority is a difficult proposition to defend. If the Staff Officers do not accept the recommendations, staff existence is not justified. When the executive follows Staff advice, the legal authority is his, but the judgement is that of the Staff. This, in fact, is the very justification of Staff. It is expected to influence the decisions of the executive and the organisation. Hence, the Staff always exercises authority in the sense of providing judgement for the executives. And when the Staff creates counter parts at lower echelons, through which it enforces, then it encroaches upon the authority (legal or otherwise) of the lower echelon executive. Since few executives are willing to accept this amicably, the system provides built-in resistance

to all new plans, regardless of their merits. It is particularly so, because each one is accompanied by a potential threat to the prerogatives of lower echelon executives. This does not bridge the gap between policy and operations. It only walls them off from one another.

The myth that Staff exercises no authority, thus is necessary and serves a useful purpose. It disguises the contradiction and preserves the principle that each subordinate report only to one superior. Even though the General Staff system frequently expresses the sincerest affirmations that operations must be decentralised, the forces in the system pull toward centralisation. A Staff unit, such as a Personnel Section, is expected to bring its special competence to bear throughout all the phases of an organisation's activities. Its job is to see that sound personnel premises are being used. Frequently, the two are equated, some times, perhaps, the pursuit of uniformity may provide the overhead only by centralising responsibility for personnel in a top level staff unit or by a centralised personnel agency. Uniformity may or may not be important in personnel, but if it is to be had, it has to be purchased at the price of centralisation. The cost, at a minimum, is reduction of the executive's discretion by the centralised agency or staff. The cause is usually charged of interference and resistance to policy by line officers. Uniformity in some areas may be cheap at the price, but the price cannot be distinguished by saying that the Staff never issues orders or usurps line authority. If authority is defined, as ability to influence or exact obedience, it is clear that overhead units do exercise authority; they do control and command.



EXCEL CHEMICALS

BASIC PRODUCERS OF THIS DIVERSIFIED LINE OF CHEMICALS FOR INDUSTRY AND AGRICULTURE	MERCURY SALTS	ORGANO MERCURIALS
	MERCURIC CHLORIDE MERCURIC OXIDE MERCURY AMMONIATED MERCURIC IODIDE MERCUROUS CHLORIDE	PHENYL MERCURY ACETATE PHENYL MERCURY OLEATE ETHYL MERCURIC CHLORIDE ETHOXY ETHYL MERCURY CHLORIDE METHOXY ETHYL MERCURY CHLORIDE
	COPPER SALTS	RODENTICIDES
	CUPROUS OXIDE CUPROUS CHLORIDE CUPRIC OXIDE CUPRIC CHLORIDE	ZINC PHOSPHIDE
	PHOSPHORIC ACID & PHOS. COMPOUNDS.	INSECTICIDES
	PHOSPHORIC ACID PHOSPHOROUS PENTA- SULPHIDE PHOSPHOROUS PENTOXIDE PHOSPHOROUS TRI CHLORIDE	WETTABLE SULPHUR MERCURY SEEK DRESSING (Dry & wet)—Formulation. MALATHION E. C.
	OTHERS :—	FUMIGANTS
	CHLORINATED PARAFFIN WAX LIQUID SULPHUR DIOXIDE OXALIC ACID ALUMINIUM CHLORIDE ANHYDROUS MONOCHLORO BENZENE	CELPHOS (Aluminium Phosp- hide) METHYL BROMIDE ETHYLENE DIBROMIDE

For more information & catalogue :

Contact :

EXCEL INDUSTRIES LIMITED

184-87, Swami Vivekanand Road,
JOGESHWARI, BOMBAY-60 NB

Grams: 'EXCEL Jogeshwari'

Phones: 571431

Telex: EXWIN 3307

EXERCISE OF COMMAND

MILITARY theoreticians are agreed that the essence of military command lies in an elusive combination of intangibles that are extremely difficult to define. Usually, they include such elements as professional competence, self confidence, mutual confidence, leadership and honour. Above all, there is the element of loyalty up and loyalty down... in other words integrity. The perspective of command is yet another important point of view in the exercise of command. It is because High Command, be it military or civilian, or a subtle and shifting combination of both, it has the responsibility to create,, to supply and to employ combat forces in pursuit of national policy. The task never so easy even before, has been rendered infinitely more difficult, delicate and complex, by the changing nature and character of war and conflict and the changing nature and character, contents and environments of military establishments themselves. Present day war planners are agreed that these challenges existing, emerging and developing, can be met only if they are recognised for what they are, are diagnosed properly and necessary policies are prepared, shaped and reshaped to cope with them.

LEADERSHIP QUALITIES :—In the post-war period, voluminous literature has been published on the qualities of head and heart, naturally inherited or acquired by education, training and experience, that must be present in the man called upon to exercise high command. The debate and discussion has not ended and it will continue. Henry Trueman of the United States has defined the leader as : 'The man who has the ability to get other people do what they may not want to do on their own and then like having done it'. This definition has not been accepted as very pleasant, palatable and wholesome, because it creates an impression that the commanders have to lead troops who, on their own, are unwilling, of low morale and poor combat capabilities and that these qualities have invariably to be created in them prior to combat employment. Col. Samuel H. Hays of United States has gone a little further in his definition. According to him; 'Leadership is a group process that involves the leader, his characteristics and personality, similar qualities of the group that he commands and the conditions under which he is exercising his command. In order to have this, he must essentially belong to them. Even the most skilled leader will need time to absorb the local atmosphere and to establish rapport with other formal and informal leaders and subordinates. It will certainly take time for him to inculcate a sense of group identity and team work that will respond to his desire'.

Definition of fundamental requisites of leadership (Command), still more acceptable, has come from Field Marshal Montgomery of Great Britain. The Field Marshal has since been recognised as one of the greatest captains of war in our times. According to the Field Marshal, 'Leader is the man who has the capacity and will power to rally round men and women to a common purpose. However, merely to have the capacity is not enough. The leader must be able to exercise effective influence. The degree to which he will be able to do will always depend upon his personality, the incandescence of which he is capable, the flame that burns within him and the magnetism with which he can draw the hearts of men towards him. It is vital, therefore, that leaders at all levels and in every walk of life must be those who are able to dominate the events surrounding them and do not let the events get the better of them.' Deducing from this, the Field Marshal has placed the leaders in three categories i.e., (a) Those who have faith and inspiration, but lack the infinite capacity for taking pains and preparing for every foreseeable future, which is the foundation of success in war.....

They fail. (b) Those who have faith and inspiration and possess the capacity to take pains and to prepare for every foreseeable future amounting to a genius. They can hope to have limited success and (c) Those who, while possessing these qualities, are inspired by a faith and inner conviction which will enable them, when the situation favours boldness, to throw their bonnet over the moon. There are moments in war, when to win it, one has to do this. They are the real leaders". Summing up his view point on leadership, the Field Marshal has said: 'Commanders in all grades must have the qualities of leadership, they must have the initiative, they must have the drive to get things done and they must have the character and ability which will inspire confidence in their subordinates. Above all, they must have that moral courage, that resolution and that determination which would enable them to stand firm when issues hang in balance. Probably, one of the greatest assets that a commander must have is the ability to radiate confidence in the plan and operations even (perhaps, especially) when inwardly, he is not too sure of the outcome. In the final analysis, the commander must be a good judge of men and events and must be able to have right men in their right places at the right time for right consequences.'

LEADER AND COMMANDER...FUNDAMENTAL DIFFERENCES:—

In a democratic set up civilian leaders are chosen by the people and they draw their authority from them. If enough of their fellow citizens feel that they have helped them attain their goals, they can be re-elected and retain their authority. If not, they lose the elections and their authority is withdrawn. In their exercise of leadership, the civilians look to the satisfaction of the electorate because they are the leaders made by the voters to act on their behalf. A military leader conversely, is an appointed rather than an elected leader. As he is appointed to leadership by the military forces, his accounting is of necessity to the chain of command of that organisation. Further, a military leaders' source of authority is from above,...from the military force...not from below, from the men whom he commands. If the military leader does not satisfy at least the minimum goals of missions that the chain of command assign to him, he will be dismissed as a leader and his authority will be withdrawn. It is the examination of these considerations which points out why a military leader, when faced with the requirement to accomplish his mission, even at the expense of the welfare of his men, sometimes has to emphasise mission accomplishment. However, he has not to take a callous view of the welfare of his men, he has to neglect their welfare in any avoidable way.

Humanitarian considerations apart, the commander has to be aware that his missions are to be accomplished by men, and to neglect their welfare would be to reduce their effectiveness. The military organisation is, by nature and of necessity, mission orientated and the leader has to accept mission that may be contrary to the welfare of his men. However, he has to mitigate this harsh necessity to the extent possible under the circumstances. He has also not to use this reasoning as an excuse to become so mission orientated that he fails to keep the men under command in good repair. He has to realise that if the men under command have to accomplish the mission for an extended period of time, they have to be provided with sufficient time and stimulation to insure that essential maintenance of equipment is accomplished and that the physical needs of the men are satisfied. To do otherwise would mean that men under command would become ineffective and incapable of accomplishing reasonable missions. The leader then will fail not only in the welfare of his men but also in accomplishing missions.

CURRENT CHALLENGES:—Hidden in the confusion of current events have been found the message of social change, of the impact of technology on people and above all the pressures of bureaucratic organisations on the values and perspectives of youth. On every hand, influence of the individual and his ability to direct his own development have been subordinated to remote and anonymous organisations which control the governments, education, salaries and careers. As these organisations have grown larger, more complex and more removed from the direct control of their members, there has been a steady erosion of group and social cohesion and a loss of personal identification at the lowest operating level. The result of this headlong advance made into complex mass security has thrown up an ever mounting crisis in leadership. Armed forces have not been immune from the effects and impact of these changes. Although, the current crisis has many faces, there seem to be three governing all others. They are :

- (a) **The Value of Professional Ethics** :—This system, historical and traditional, provided the rules governing the attitudes and much of the behaviour of the officer corps. This system, it is claimed, protected the general society and its members from the dangers of usurpation of authority and the misuse of vast potential power entrusted to military authorities. The existence of professional code, it is further claimed, created an atmosphere of trust and confidence that was needed to support internal cohesion under pressures of combat. However, there has since been a steady decline in the authority and effectiveness of this system. This has been attributed to the changing conditions within the Services, as well as in the society at large. The draft and annual in-take of short term officers, although contributing much to the Services, has tended to carry with them substantial loading of civilian values and perspectives, many of which have tended to weaken or undermine those of the military. This penetration of the civilian values has been further reinforced by the expanded, and ever expanding, relationship with the civilian community in the educational institutions, in the procurement establishments, in the staff operating at the national level and in the assignments to life off-post in civilian community. Nothing much seems to have been done to establish measures of self policy over the professional ethical system or to develop a progressive educational system to support it. Perhaps, nothing has been found possible.
- (b) **Selection of Leaders and the methods for their Development** :—This system has been a vast departure from the earlier systems, has permitted further, loading of the civilian influence and values and has further weakened the ethical system. This has also had important impact on the quality of the leaders chosen or promoted. Promotions of officers are now generally based on seniority and efficiency reports. These reports, it is alleged, are not necessarily based on combat qualities. They, even otherwise, lack objectivity and validity in their content. The other side-effects of similar nature have resulted from what has been called 'Branch Career Development Programmes ... certain jobs and graduation from certain institutions', has resulted in what has since been called 'Ticket Punching System'. Finally, the steadily growing centralisation of policy and decision making has placed heavier emphasis on uniformity and conformity with which has tended to promote substitution for reality.
- (c) **Inter-Personal Bold Life Communication** : This has been yet another critical area in the exercise of leadership. Earlier, the standard practice was that the High Commands established goals and set rules for the dissemination to the subordinates for execution. The communications from the subordinates were almost invariably in the shape and form of performance reports, status reports or explanations of failures. Several factors have since intervened to give this system a diminishing utility. The higher education of the present day recruit has given him a greater need to know, to contribute and participate in the programmes. Present day conditions have, therefore, made it imperative that leadership policies and techniques take these factors into account. Rather than suppressing it, constructive

BOMBAY SCIENTIFIC GLASS WORKS

13th. Khetwadi Lane, Bombay-4.

Phone : 354589

Manufacturers of :

Neutral Glass Ampoules, Test Tubes, Tablet Tubes,
All Glass Caps For Ampoules:
Droppers And Graduated Glassware
And Other Glassware For Hospitals And Laboratories.

Stockists of :

GLASS TUBINGS AND HARD NEUTRAL GLASSWARE
FOR HOSPITALS AND LABORATORIES

With our

Warmest Greetings to

Phone : 310540—313694

Grams: CHEMINTER

All officers and men
of

Our Gallant Armed Forces

Chemical International

3, Princess Street, Bombay-2.

Direct Importers, Stockists and Dealers of :

Photographic, Laboratory, Industrial Heavy and Fine Chemicals'
Pharmaceutical Drugs, Sizing Materials, and all sorts of Textile
Requisites, Acids, B. P., C. P. & A. R. Cosmatic Wax, Distilled
Water, C. P. College Chemicals, Pancreatine Acetone, Lanoline
Supperwax, (Lenette Wax) Indian & Solvent in Barrels, & in
small Packings of 450 ML. Etc.

leadership has to harness these factors to objectives and purposes. At a time when weapons have become so sophisticated, situations more flexible and the demands for initiative and creative ability growing more and more pronounced, leadership at the higher level has to encourage participation by the subordinates. It has to talk with them, rather than only talk to them.

MORALE AND MOTIVATION :—Morale has since been recognised as the fundamental principle of war and it has been given its pride of place by all enumerators of the principles of war. Field Marshal Montgomery of Great Britain has considered morale as the greatest single factor in war and the successful exercise of command'. According to the Field Marshal, 'The best way to achieve a high morale in war is by success in battle...The good general is one who wins his battles with the fewest possible casualties. However, morale can be high despite higher casualties, if the battle is won and men are satisfied that it was not wastefully conducted. Some think that morale is best sustained when soldiers are surrounded by comforts and fringe benefits. My experience, however, has been that soldiers are at their best when asked to face up to hard and challenging conditions. Soldiers, properly led, respond to challenges and not to welfare benefits.'

Discussing the question of morale, General Bruce C. Clarke, US Army (Retired), has said, "Commanders at all levels in the Armed Forces have a challenge unique among the Services. They are charged with the producing of superior units with ordinary run of man power. No other service will attempt that. Now remember that, to me, makes the Armed Forces attractive... produce superior units with the ordinary run of man power..." And we do it. The people who do it are good leaders and good commanders. And that leads us to the question of morale which is a thing that a lot of people do not understand. Civilians usually do not understand morale. Many soldiers do not understand it either. Morale results from only three things i.e. having a responsible job to do because from this comes the job satisfaction; having been trained well enough to feel that the man is properly trained to do the job properly and that some body appreciates. Now that is all there is to morale.'

Basic to motivation and the build of morale has always been a clear and easily understandable cause. Instances are abounding where huge armies, armed to teeth, suffered disasters because the commanders did not have a clear cause with which to motivate their troops and commit them to battle for victory at all costs. Military theoreticians have contended that motivational build up of the armed forces would consist in three elements i.e. (a) The desire for survival, (b) Personal, team and ultimately national pride and (c) Pressures of values imposed and impressed by the commander. They have further contended that, each of these factors would play a different role in motivating the troops and yet they would all be deeply interdependent. Each would support the other under conditions of proper leadership, training and indoctrination, collectively, administered properly, they will give the troops the necessary reason why they must fight aggressively and superbly.

INITIATIVE :—Intangible qualities of individual responsibility and initiative have been recognised as essential and indispensable attributes of military character. It has been emphasised that they must be interwoven in the entire fabric of military system. It has further been recognised that they cannot be replaced by any mechanistic organisational device. They have to come to an operational focus in the high military command. However, it has been cautioned that while exercise of command or direct use of initiative means freedom to act, it does not mean freedom to disregard or depart from standard procedures, practices and instructions without sufficient and

valid reasons. In reality, initiative means freedom to act, only after one's full resources in education, training, experience, skill and understanding have been brought to bear on the work in hand. As such, it requires intense application to ensure that what is done by individual initiative is a co-related part of a connected whole much as the link of chain or a gear wheel in a machine. In order that there is a clear understanding and better practice, in the exercise of initiative, it is enjoined as a guide to all those concerned that 'active operations' (commonly called war), require the exercise and the utilisation of the full powers and capabilities of every officer in command status...Within the frame work of the connected whole, the subordinates have to become habituated to think, to judge, to decide and to act for themselves. However, the initiative of the subordinates has to be so exercised in principle and application that, ultimately it becomes universal in the exercise of command throughout all the echelons of command.

MATTER OF DECISION:—In the view point of Field Marshal Montgomery the acid test of an officer who aspires to high command is his ability to be able to grasp quickly the essentials of military problems, to decide almost instantaneously what he has to and what he must do, and to make it certain to see that his subordinate commanders and other ranks get on with the job...mission in the military parlance. The matter of decision is vital for a leader. The modern tendency is to avoid taking decisions and procrastinate in the hope that things will come all right in the wash. This is neither desirable nor conducive to the accomplishment of the missions or even to the required morale standards of the troops under command. The only sound policy for a military leader is **decision in action and calmness in crisis**. To sum up, 'The leader must know what he himself wants. He must then be able to see his objective clearly and then strive to attain it giving firm guidance and clear lead to men under command. While doing so, he must create, sustain and maintain the atmosphere which will inspire the men under command to live, labour, fight and, if need be, die in action cheerfully and saturated in the pride of the cause'.

THE HUMAN APPROACH:—Men in command and decision at all levels have to realise and be clear about it that armed forces are not merely a collection of individuals, with so many tanks, guns, machine guns etc. Their real strength is not just the total of all these things added together. Whatever the combat effectiveness of these machines, it is the men who have to use them and achieve the desired and expected effectiveness. This extra (it may be said real) strength is provided by morale, fighting spirit, mutual confidence between the leaders and the led, the quality of comradeship and many other intangible spiritual and moral qualities. This strength can come only if the command is humane within the frame work of the mission assigned. Further, men in supreme command have to realise and be clear about the fact that armed forces must be as hard in battle as steel...that like steel, armed forces can reach their quality of steel only after adequate preparation, training and indoctrination and only if these vital ingredients are properly constituted and handled. Men in command have to realise that, like steel, armed forces are most sensitive instruments and can easily become damaged.....**sometime damaged beyond repairs and recovery**..... The basic ingredients of all armed forces are men. Bottled up in the hearts of these men are great emotional forces which have to be given an outlet in a way that is positive, constructive, warms their hearts, excites their imagination and launches them into the field of battle with the spirit of **elan**. This pushes into the fore the matter of human approach in all decisions. If the human factor is cold and impersonal, then nothing would be achieved. If the matter of decision has an adequate human element, if it can gain the trust and confidence of the men, if it can make the men under command feel that their best interests are safe in the hands of the commander even

in the heat of battle, then only command can become a priceless asset and make the greatest achievements.

NEW COMPREHENSION :—No man, however, great and gifted otherwise, can long continue to enjoy the trust and confidence of his men and continue to be their leader, unless he wins victories in battle. Victories in the field of battle are not necessarily the result of following set rules or established models. On the contrary, they are more often the result of a new comprehension of the dominant facts of a situation at a particular time and all the forces, positive and negative, at work then. Every great operation of war is unique and unprecedented in its own way. Every great operation, therefore, needs a profound appreciation of the actual event. There is no surer road to disaster than to immitate the plans of by gone heroes and fit them into novel situations. In battle, the art of war will lie in understanding that no two situations are ever the same, each must be tackled as a wholly new problem and to each there must be a wholly new answer.

OPERATIONAL PLAN :—Successful commander must draw up a plan for the campaign he envisages and he must always think and plan two battles ahead. One, he is preparing to fight and the next, that he will have to fight to carry the mission nearer to final accomplishment, using the success gained in the first battle as the spring board for the next. The plan of operations must be the creation of the commander himself and not forced upon him by his staff, by circumstances beyond his control or by the enemy. It must be related to what is strategically desirable as also to that which tactically possible with the forces at his disposal. If this is not done, success, far from being possible, will not even be likely. Having done that, the commander must then strive to read the mind of the enemy, to anticipate possible and probable reaction on his part and also to take all possible steps to prevent the enemy interference with his plans at any stage or in any manner. In other words, his plan when finalised must be in the context of force and vulnerabilities, and ensuring that the factors of force at his disposal would be truly over-whelming and will permit maximum concentration for a victorious decision.

VERBAL ORDERS :—Not all orders issued in the heat of battle are written. Actually, it is preferred that operational comand in the battle should be direct, by means of visits to the subordinate HQs and the orders issued should be verbal. However, this procedure presupposes that subordinate commanders and staffs are fully trained to work and act on verbal orders and can be relied upon absolutely. Those who are not trained and cannot be relied upon, cannot of be of much use in keeping pace with the fast developing battle situations. However, those in high command must know the way to issue verbal orders. They must realise that no two officers would be of the same mental calibre. Each will, therefore, require a different treatment and different way of issuing orders. The reactions of the subordinate officers will also be the possibilities of misunderstandings. It must, therefore, remain the constant effort of the high command that, eventually mutual confidence is established and the verbal orders have the desired and expected effectiveness.

MESS OF DETAILS :—Experience has shown that no man in high command whose life is spent in the consideration of details and who has no time for quite thought and reflection, can make a sound plan for battle on a high level and conduct large scale operations efficiently. Actually, experience has shown that if the man in high command gets involved in the mess of details, he causes dangers and temptations which carry him on the side issues.....issues which have little influence on the battle. As such, he fails to be the rock on which his staff can lean. Details being essentially the province of staff, it is vital that the senior commander avoids getting himself

immersed in details. His task being 'wage and win the battle', he must remain concentrated on defeating the enemy.

MATCHING TO THE JOB :—It has been recognised as a fundamental principle of business management that all men are not the same in their interests and aptitudes, in their tenacity and endurance and, therefore, in job performances. In order to ensure maximum productivity at the minimum cost, and within the shortest time, selectivity of the highest order is necessary. If it is very true in business management, it must be true many times over in the mission performance of the armed forces where the vital stakes are victory or defeat or survival or death. Merely pinning stars, stripes and bars on the shoulders of the soldiers would not make them effective commanders. Exhorting them to behave in a prescribed manner will also not be of much help because skill in inter-personal relations is not equally distributed in mankind. It will, therefore, be absolutely necessary to determine the most skilful and assign to him the job for which he is fitted most.

To look at, all men in uniforms may be good enough. However, there will still be variations in the interests and aptitudes to battle environments. Some of them would be excellent at night action, while others may prefer to fight in day light.....some of them may be at their best at the fluid and mobile battle situations, while others may be temperamentally more suited and adapted to solid killing match in close quarters. And then what is true in the case of the soldiers is also true in the case of their commanders. Like soldiers, they will also be different. Some may be at their very best in handling mobile battles, while others may be at their very best at set-piece campaigns. Finally, what is true of soldiers and generals would be true of units and formations when the grouping is carried out according to temperamental differences and other personality characteristics. Not all commanders have a direct hand in recruitment, postings and assignments. The problem is solved to some extent by specialised recruitment, specialised training for specialised tasks. However, much is still left to the immediate commander. It is he who has to know and understand the men under command, assess and evaluate their capacities and capabilities and accordingly, match them to positions where they would be most efficient and effective. Here again he has to take into account the surprise capabilities of the enemy. After all, despite his best efforts, the battle may not turn out to his plan and he will still have to fight.

INTO THE BATTLE :—Whatever the merits of a military commander otherwise, his acid test is the battle field. Here, in the midst of roaring and fire emitting guns, his command capabilities will be judged from the planning, preparation, and

PRIDE OF EVERY OFFICER AND OTHER RANK

"OPTIMATE"

(REGD)

PEN—BALL—PEN—SETS

FOR FINE AND SMOOTH WRITING

Manufactured by :

CHANDRA INDUSTRIES

Old Nagardas Road, Andheri, Bombay-69

Phones :
573461-2

Gram : "Chandra Pen"
Andheri—Bombay-69

imexecution of his battle plans. A number of musts have been categorised. The most important are; (1) The commander must decide how he will fight before the battle begins. He must then decide how he will use the military effort at his disposal to force the battle to swing the way he wished it to go. (2) He must make the enemy dance to his tune from the very beginning and never vice-versa. To be able to do this, his own disposition must be so balanced that he can utilise but never react to the enemy's move. He must be able to continue relentlessly with his won plan. (3) A commander must be thorough in making his tactical plan. Once made, he must be utterly ruthless in carrying it out and forcing it through to success. (4) Before the commencement of the battle, the commander should assemble all subordinate officers, and explain to them the problem, his intention, his plan and generally how he would fight the battle and make it go the way he wants. (5) The commander, in turn, with due regard to secrecy, should, at the right moment, pass on all relevant information to the regimental officers and men. (6) Ultimately, all soldiers must know, before they go into the battle how the fighting would fit into the larger picture and how the success in fighting will influence the battle as a whole. As a result of this process, the entire force will go into the battle, knowing what exactly is wanted and how it would be achieved. (7) And when the troops see that the battle actually progressed exactly as they were told, their morale would be lifted and their confidence in the High Command will increase manifold. (8) A commander must take every possible step to see that troops are in a state of wild enthusiasm before the commencement of operations. He must take all steps to see that the troops have their offensive eagerness and infectious optimism which comes from physical well being. They must enter the fight with the light of battle in their eyes and definitely wanting to kill the enemy. In achieving this end, it is the spoken word which must be used because experience has shown that in the matter of arousing enthusiasm spoken word is far more effective than a written document....

WITH BEST COMPLIMENTS

FROM :

TOOLS & COMPONENTS COMBINE PRIVATE LIMITED

10, DHANJI STREET, BOMBAY-3.

MANUFACTURERS OF :—

T. C. C. MAKE ALUMINIUM FOLDING FURNITURE
T. C. C. MAKE ALUMINIUM LUNCH BOXES
T. C. C. MAKE UNIVERSAL AUTOMATIC FACING
& BORING HEAD.

*With Our
Warmest Greetings*

To

**ALL OFFICERS AND MEN
OF OUR GALLANT
ARMED FORCES**

Hubs & Drums (Private) Ltd.

Manufacturers of

**Hubs, Brake Drums, Clutch Housing, Flywheel
Housing King Pins, Chassis Parts, Engine
Parts, and other Automobile components**

Regd. Office :

Modi Chambers,
French Bridge,
Bombay-4.

Phone : 351265

Adm. Office :

Akash Deep, 3rd Floor,
French Bridge,
Bombay-7.

Phone : 351800

Office & Works :

Mangal Wadi,
Varachha Road,
Surat,

Phone : 25337

SOVIET CONCEPT OF COMMAND

IN the Soviet thinking under Lenin and later under Stalin, there were two concepts of command and decision. One was of inspiring initiating and directing. The other of implementing and directing in accordance with the plan. During this period, there was also the concept of 'Vozhd the supreme leader in whom all knowledge foresight and wisdom was claimed to lie and who was considered to be the symbol of all morale, political unity, combat capability, the unswearingness of the armed forces and who was identified with all that could possibly be good and powerful at all levels of command and decision. After the death of Stalin and in the absence of an equally powerful man having risen to power, Stavaka or Politbureau emerged as the Sole repository of all command and decision in the Soviet Union.

SUPREME COMMAND :—Leadership at the top level, in the Soviet thinking, includes initiating, calculating, planning and decision making. Leadership qualities at this level also include ability to calculate soberly the relation of forces and to foresee the course of events. In time of war, this subjective factor is considered most important.....the ability to know-how to lead soberly, evaluate exactly, utilise correctly the potentialities and to foresee the course of events, particularly when the picture is dark, dismal and discouraging.

FIELD COMMAND :—In the Soviet thinking, leadership qualities required at the top level are not the essential basis or the final criterion at the lower or field command level. Soviets do not base leadership at this level on the virtues of inspiring, initiating and directing, but on the basis and criterion of implementing and directing, according to plan. The leadership at this level is charged with guiding and implementing of the overall policies and plans determined by Stavaka or Politbureau. However, in the Soviet thinking, this does not mean that field command is not one of supreme importance in war. Actually, Soviets consider command at this level as one of the permanently operating factors critical to victory or defeat in war. The form in which this principal is stated is truly revealing of the Soviet mind....." **The Organising Ability of the Command Personnel** :. In the Soviet concept, tactical leadership is a part of the strategic leadership. In their view point, the task of tactical leadership is to master all forms of struggle and to ensure the correct utilisation of their capabilities in order to achieve maximum results obtainable with the relative strength of forces available. Actually, in the Soviet thinking, this factor alone provides the real meaning, purpose and distinction between **strategy and operational art**.

ELEMENTS OF THE SITUATION :—In the Soviet concept, the **elements of situation** occupy a position of central importance in decision making. In their thinking, this alone necessitates the correct evaluation of one's own forces, those of the enemy, terrain and time. In the Soviet thinking, the contents of the basic documents planning a cotemporary operation is distinguished invariably by deep foresight and correctness. They include, not only an exact analysis of the situation, plan, decisions and tasks by stages, but also complex organisation of the operation, its preparation, execution and material preparation. In the Soviet thinking, an army operation has to be planned in particular detail in respect to the determination of time, place, subsequent actions and combined actions of troops. A combat order, reflecting the nature of centralised command has to stipulate rigidly the immediate and subsequent tasks by defined boundaries, objectives and time.

ITALAB PRIVATE LIMITED

INDUSTRIAL TESTING & ANALYTICAL
LABORATORIES

"Meher House"
15, Cawasji Patel Street, Bombay-1.

Telephones : 253882—253667

Grams : "ITALABO"

FOUNDER
LATE: DR. H. R. NANJI

Branches at:

**CALCUTTA, MADRAS,
VISAKHAPATNAM,
KANDLA & BELLARY**

Associates :

ITALAB (JAPAN) LTD., TOKYO
ITALAB (EUROPE) G.m.b.H. N.
DURSELDORP
ITALAB (GOA) PVT. LTD., MARGAO

*In our upto-date well-equipped,
ANALYTICAL & CONSULTING
LABORATORIES, We undertake
prompt and accurate analysis of :*

**Oils, Oil Cakes & Fertilisers,
Drugs, Pharmaceuticals & Chem-
icals, Foods, Spices, Cuss &
Starches, Paints, Varnishes &
Petroleum Products, Minerals,
Cres, Metals Residues & Alloys,
Insecticides, Pesticides, Coal,
Fuels, Water, Textiles, Paper,
Etc. Etc.**

We also undertake Surveys for
Quality, Weight and Origin of
Export or Import Consignments of
Payllium Bunks, Textiles, Cils, etc.

With Best Compliments from :-

THE GAEKWAR MILLS LTD.,
BILLIMORA

*Manufacturers of Fine & Superfine
Fabrics*

'KINGSWAY'

**Cotton 'Terene' & Blended, Suitings,
Printed Dress Materials and
Bush Shirt Materials.**

**All Cotton Sanforized Superfine &
Fine Poplins, Suitings, Dress Mate-
rials, Lenos, Dhoties etc.**

**Wash & Wear Drip Dry 'MINIDRIS'
Fabrics in suitings and Poplins.**

Head Office :

Mehta House, 79-91 Apollo Street,
Fort, Bombay-1.

*Available at Mills Retail Shops in the
Premises of :*

MESSRS. HORMUSJI & SONS,
Arvind House, Opp. Harkisondas
Hospital, Charni Road, Bombay-4.

C/o. WEEKAY SONS,
409, Sheikh Memon Street,
Bombay-2.

AND
AT ALL LEADING STORES.

OPERATIONAL PLAN:—In the Soviet concept, only at the top level do plans present the design and mission. They, however, permit the commanders at the field level to adopt flexibility in the changing situations. At the top level, this mission type is devised by Stavaka and is elaborated by the General Staff. In the Soviet concept, the plan of an operation is not only a document, but a series of documents. However, the basic document presents the motive decision of the command, containing the design and general plan of the operation worked out in stages and aims. The exposition of this is pre-determined by the characteristics of the task, and evaluation of situation. However, in the Soviet concept, even at this stage the plan has to be flexible in order that it can be supplemented or altered as may be required by the emerging and developing situation. For that, the makers of the plan are required to possess insight, to foresee the possible change of circumstances and to prepare for the corresponding measures. It is clearly emphasised that, it is the top level planners, and not the field commanders, who are expected to foresee the possible changes of situation and to introduce corresponding measures in the plan itself.

PREDICTION AND CHANCE:—Soviets recognise that prediction plays an important role in their political code as also in military matters. In the Soviet terminology, prediction is based on the 'calculation of the reaction of forces, existing, anticipated and expected'. However, Soviet military doctrine does not rely totally on foresight, even when it is fully based on information and complete analysis. In the Soviet concept, the counter points of vigilance to meet the unpredictability of chance and danger of provocation is as pervasive as the stress on foresight and prediction. Soviets recognise that, in the absence of proper and rational action, chance is a great threat and positive danger both to plan and operations. This is, particularly so when there is discrepancy in rational calculation and planning, and its effect on the manipulation and influence. In the Soviet view, the decisive relation of forces between their own and those of the enemy, although fully calculated, must yet be subject to constant and continuous manipulations in order to eliminate the threats and dangers of chance. In addition to the danger from chance, the Soviets fear ever more the danger from provocation. In the Soviet concept, unless the objective situation is most carefully calculated and definite plans are formulated and carried out to the very end, there will always be the great danger, if the enemy is able to provoke unwittingly a course of action favouring his side of the question of the relation of forces.

INTELLIGENCE AND SABOTAGE:—'Razvedsa', the Soviet word for intelligence, has a very broad meaning and comprises all that can possibly be understood by all means of intelligence as a process, as an institution and also as reconnaissance. In the Soviet concept, intelligence 'strategic, operational and tactical' must occupy a place of extraordinary significance in all military thought and planning. In their concept, the task of intelligence is to uncover any advantage that the enemy may have or any manoeuvre that the enemy may be contemplating to launch. The Soviets consider it necessary to know through intelligence, the disposition and actions of the enemy, not only at the front or considerably more broad than the sector or the zone of actions of a given operations, but also in the depth of his disposition, to the most distant reserve..... not only closely fixing and studying the smallest changes in the grouping of the enemy, and any kind of advantage that he may have, but also to be able, to penetrate the very plan of the enemy and uncover his very design.

CLARITY OF ORDERS:—Soviets claim that the experiences of civil wars demonstrated to them the vital need for channels of command communication. However, Frunze was among the very first officers in the Red Army to clearly understand

and categorically state that 'military organisation to be successful would demand special clarity, precision, completeness, endurance and speed of fulfilment of instructions. The fact that the Soviet supreme leadership recognised the value of Fruze's assertions is evidenced by the fact that, Soviet military doctrine in the years following never failed to stress purposefulness, and clarity of orders. The 1936 Field Service Regulations clearly stated that; 'In giving orders, the overall commander must direct particular attention to a clear and precise formulation of the general tasks of the formation (unit), expressing the fundamental idea of the decision taken, that is the direction of the main blow for the achievement of the concluding aim of the battle. The art of composing an order must, consist in being able to express the salient and categorical idea of the battle in several words, Again the 1942-43; 'Infantry Combat Regulations provided that, 'An order issued must set forth clearly, concisely, without the motivation, but in such a way that the subordinate understands the mission assigned to him. The 1946 Field Service Regulations also provided that 'Purposefulness of the decision and clarity of the mission are the very basis of command'. The view point has continued to be included in all Regulations published subsequently.

ORAL ORDERS:—In the Soviet concept, oral communications occupy a place of great importance. The Soviets have conceded on several occasions that, documents cannot be brake for the gegining of work, which is determined by personal contact. In practical work, no written documents may be given out until a defined time. This may be necessary in the interest of preserving planned measures in secrecy. Further, preliminary oral statements and unit orders become more living than those contained in written documents. Due to this, the mobility of command can also grow. Under the circumstances, therefore, the most flexible method of assigning missions would not be combat order but personal combat instructions. This was given the official seal of approval in 1942-43. Infantry Combat Regulations and this does not appear to have been contradicted in any way subsequently.

COMPLIANCE:—In the Soviet concept, an order from superior is law to the subordinate. In the Soviet concept, an order must be fulfilled absolutely, exactly and immediately.....Exact, timely and inconvertible fulfilment of orders is the fundamental combat activity of the field commanders. It is only in the fact of sharp change of conditions and proven impossibility of the realisation of orders that the commander can act on his own initiative. According to the Soviet Internal Service Regulations of 1946; 'The Soviet soldiers are pledged that they would fulfill absolutely all military regulations and orders of the commanders and superiors. Regulations are the law of soldier's life. To live by the regulations constantly and to strengthen discipline and order is the most important duty of the Soviet warriors'.

DISCIPLINE:—In the Soviet concept, discipline is vital to the successful exercise of command. Soviets concede that military organisation is a specific organisation requiring of its members particular metaculousness, accuracy, self-control and rapidity in carrying out all orders and instructions. The more complicated and responsible tasks confronting the army, the firmer must be its discipline. Soviets further concede that the habit of discipline is not acquired overnight. It comes only in consequence to living in accordance with regulations and guiding themselves in everything by of discipline.....it is moulded under the action of many factors..... the dominant being political education.....education in the spirit of socialist patriotism, proletarian internationalism and communist morality. In the Soviet armed forces, therefore, discipline is achieved by; (a) Nurturing the Servicemen in high morale,

political and fighting aualities and conscious obedience to the superiors, (b) Maintaining in each unit (element, ship) the firm order established by regulations. (c) Insisting upon high exactiveness of the superiors towards subordinates by a competent combination and correct application of meausres of persuasion and coersion. In the Soviet concept, a commander's prestige, the strength of his exactiveness towards his subordinates is higher according as his knowledge of military affairs is deeper, his own conduct more impeccable and examplary, However, Soviets insist that a commander's exactiveness is inseperable from his solicitude for his subordinates. They consider this as two sides of the same coin. Finally, the Soviets insist that nothing is so likely to discipline the soldiers as firm and well thoughtout orders.

INITIATIVE :—Despite the extreme rigidity in the matter of disciplined compliance, Soviet military doctrine formally provides for and strongly urges the display of initiative at all levels of field command. In the Soviet concept, it is claimed, display of initiative is one of the most important conditions for success in battle.....**Prepareness to take on oneself a bold decision is the very basis of action for all commanders in battle.** However, display of initiative cannot and msst not go contrary to the general decisions of the superiors. On the contrary, it must by all means enable better fulfilment of the mission assigned.

**WE SERVE THOSE
WHO HAVE IMMORTALISED
THE HISTORY AND TRADITIONS
OF INDIA**

**OUR GALLANT ARMED FORCES
THE LIBERATORS OF
BANGLA DESH**

●
**Steel Industries of Hindustan
Private Limited.**

Magazine Street, Darukhana, Bombay-10.

..... STRUCTURAL & MECHANICAL ENGINEERS

Phone : 373896

Grams: 'FERROTYPES' Bombay.

WE

SALUTE

OUR GALLANT ARMED FORCES

THE LIBERATORS OF THE
SEVENTY FIVE MILLION
PEOPLE OF BANGLA DESH
HELD IN CHAINS BY THE
TYRANNICAL MILITARY JUNTA OF
WEST PAKISTAN

AND

PLEDGE OUR CONTINUED SERVICES IN ORDER
THAT THEY MAY SHINE IN GREATER GLORY
IN THE YEARS TO COME



PEARL METAL WORKS

20 WADI BUNDER ROAD, MAZGAON—BOMBAY-10.

MANUFACTURERS OF

**“PEARL” BRAND STAINLESS STEEL
UTENSILS AND CUTLERY**

Phone : 373880

Grams ; “PEARLWORKS”

COMMUNIST CHINA

WHEN the Chinese communists established their regime in 1949, their army of some five million men, was thoroughly pervaded with the Party ideology and its organisational techniques. In the tight grips of the Party, this army was also most highly skilled in the conduct of guerrilla warfare. However, from a strictly military view point, it was an anachronism. It lacked naval or air arms, its command structure was decentralised and rudimentary and its equipment was heterogeneous and largely obsolete. Its irregular, revolutionary and 'democratic' character, and its intimate relationship with the population blurred the distinction between ranks and between soldiers and civilians. Under the circumstances, the Army at this stage could not be credited with having any command concepts, as they were generally understood and practiced in other armies of the world, including the Soviet Union.

MODERNISATION-BEGININGS :— In the beginning, some military commentators were of the view that Chinese leaders were irrevocably committed to guerrilla mentality. They, therefore, disparaged the importance of modernising their army. This, however, proved to be an erroneous belief put out more as a propaganda item than the projection of truth. **Chairman Mao Tse Tung**, in his opening speech to the **Chinese People's Consultative Conference** in 1949, stressed the need for building a completely modernised armed force. So rapid were the steps taken by the Chinese high-ups that, by September, 1951, **Chu Teh** was in a position to assert that, "PLA had already acquired a certain amount of modern equipment and had established various specialised arms.... The PLA was fast transforming itself from the past purely land force, depending in the main on infantry.....to land, naval and air forces with various kinds of modern technical equipment and capable of waging co-ordinated warfare between various arms. In 1952, **Hsiao Hua**, the then **Deputy Director general of the General political Department of the People's Revolutionary Military Council**, was in a position to further assert that, in its twenty five years or existence, the PLA had grown up and developed from small to big, from weakness to power, from guerrillas to regular army, from scattered to concentrated, from fighting guerrilla warfare to fighting orthodox warfare. The PLA was geared to the new circumstances which called for the mastery of military science, skilful use of modern weapons and equipment, strict observance of military discipline and art of conducting co-ordinated actions of all branches of the army. In 1953, **Chu Teh**, while speaking on the achievements in modernisation, asserted that, the past four years had witnessed the resolute implementation of Mao's directives and Chinese already possessed a powerful Air Force, a powerful Navy and various Technical Corps'. In 1954, the results of the modernisation were summarised by the **New China Agency** which claimed that during the past few years, the Army had vastly improved its equipment and had built up a modern Air Force and Navy, modern artillery forces, armoured forces, air defence, engineer corps and signal, railway, public security and rear service units. Simultaneously, the Army had unified its command, organisation and training system and had strengthened its discipline. Claims for further advances in the direction were also made in 1955, and then 1956.

OFFICER CADRE :—By 1954, the Communist Chinese were in a position to claim that, already the PLA had built regular military, political and cultural academies for the training of large number of officers. The pre-occupation of Chinese leaders with the elevation of the quality of military leadership was further underlined in an editorial in the **People's Daily** which said that; "The central task of the PLA in the period of modernisation was the training of officers". A similar theme was

echoed by the **Workers' Daily** in July, 1955. Speaking to the **Eighth National Congress of the Chinese Communist Party** in September, 1956, **Marshal P'eng Teh Huai**, the **Minister of Defence**, again highlighted the need for a professionally trained officer corps.

In the early days of the Red Army, there was no central establishment for the training of officers. It was only in the late 1933, that a central military academy for all the Soviet regions; '**The University of the Red Army**' was set up near Juichins, capital of the Central Soviet District. The academy was divided into three main faculties....**command, political and operational staff**. This academy was, however, short lived. After the formation of the United States, this academy was renamed as the **Anti-Japanese Military Political University**. The other academy was set up by the **New Fourth Army** in the South. It appears that these two academies could not supply the need for trained officers. To relieve the shortage, institutions for training local commanders were also set up. By the end of 1941, there were at least four such academies. In 1949, when the Chinese army stood on the threshold of modernisation, the leadership turned its attention to rapidly meeting the demand for trained officers. In March 1949, some thirty days after the Communists had occupied **Peking**, **North China Military Administration University** announced the entrance examinations. However, it was not until December 1950, a little over a month after the Chinese had entered the Korean War, that an intensive, nation-wide campaign to recruit candidates for officer schools was set in motion. In December, 1950, were specified the qualifications required for the candidates in each; aviation, naval, tank, artillery, air defence and other schools and the period of study. In February, 1951, the Chinese claimed the campaign for enrolling candidates in officers schools had been concluded. These officers later formed the backbone of the new officer corps. In the ensuing years, the growing complexity and diversity of the armed forces led to an increasing emphasis on professional competence. As a result of the growing need for professional officers, by 1962, the original handful of schools had mushroomed into a network of at least seventy seven military academies, reflecting the diverse nature of the specialised training given to the officers.

STAFF SYSTEM :— Throughout most of the revolutionary period, the outstanding feature of the Chinese Communist military organisation was decentralisation. It was in mid-1930, that an attempt at some sort of centralisation was made. However, no central command was contemplated until the **First Congress of Chinese Soviets** in November, 1931. It was a resolution passed at this Congress which called for the establishment of a supreme military organ, a **Revolutionary Military Command and General Staff of the Red Army** for the direction of the organisation, training of the Red Army, as well for the direction of military operations. Although, the second Congress held in 1934, noted that the resolutions of its predecessors had been fully implemented, yet no real centralisation had come about in the meantime. Actually, the Chinese Army had not elaborated command structure and the staff system remained rudimentary right upto the close of World War II.

SUPREME COMMAND :—At the time the Communist regime was established on the mainland, the highest military body was the **Peoples Revolutionary Military Council**. It enjoyed a unique status in the regime's power structure as it stood at par with the **Government Administration Council or Cabinet**. Since there was no Ministry of Defence, the Staff Departments were directly subordinate to it. Below the national level, authority rested with **Military and Administrative Committees** which were headed by Generals who had commanded the occupying armies. This state of affairs persisted until 1954. A far reaching process of centralisation was begun in late 1952. It culminated with the adoption of **Constitution**. At the national

level, the Peoples Revolutionary Military Council was abolished and a **National Defence Council** was set up. A **Ministry of Defence** was established subordinate to the State Council which replaced the government Administration Council. It was at this time that the relatively unknown, but extremely powerful, **Military Affairs Committee**, was reactivated to take charge of the overall direction of military matters. This Committee was clearly the highest source of decision-making for the military establishment below the Politbureau. The Ministry of Defence and the General Staff assumed responsibility only for the day to day operations of the military machine. After the abolishment of the Greater Administrative Regions, which had interposed between the Centre and the Provinces, the local military organisation was centralised and further streamlined. At this time, no where was the specialised and intricate nature of the modernised Chinese army more apparent than in structure of the General Staff system and its subordinate organs.

PROFESSIONALISATION :—No single event contributed more to the growth of professionalism than the adoption of the '**Regulations on the Service of Officers**'. In February 1955, these Regulations fundamentally altered the informal, egalitarian and '**democratic**' nature of the Chinese Communist Officer Corps as it had been moulded during more than two decades of revolutionary warfare. Actually, the introduction of the Regulations and the subsequent conferment of titles and honour on the military leaders, sounded the death knell of the egalitarian, irregular and informal guerrilla officers and laid the ground for the development of a status conscious, routinised and formalised officer corps. For the first time in the history of the Chinese Communist Army, officers were classified into categories based upon their fields of specialisation. The Regulations also established regular channels for entry into the officers corps. They also emphasised professional competence in the matter of advancement. Hereafter, the officers were also required to wear the shoulder boards and insignia in accordance with their ranks. The institution of Military Awards was also commenced.

CONSCRIPTION :—Until the mid-fifties, the Chinese Communist forces were composed of '**volunteers**' who were recruited through appeals to patriotism and self interest through social pressures. With the establishment of the Communist regime, the principle of compulsory military service was incorporated into the Common Programme of 1949. However, it was not until March 1953, that a **Military Service Law Drafting Committee** was set up under the direction of the People's Revolutionary Military Council. By 1954, conscription was being gradually introduced. In July 1955, the **Military Service Law** was formally approved by the National People's Congress. According to this law, all male citizens, regardless of race, social background, religious belief or educational level, were required to serve in the armed forces on reaching the age of eighteen. Prior to January, 1955, non-commissioned officers and privates served for a term of three years (four years in the Air Force and Coastal Defence Patrol and five years in the Navy). On January 19, 1956, the **Standing Committee of the National People's Congress** extended the terms of service of the non-commissioned officers, as four years in the Infantry, five years in Special Army Units, Public Security Units, the Air Force and shore-based Naval Units and six years for men serving on naval ships. The Military Service Law and enforcement of compulsory service represented an important reform of the system of PLA. It drew a distinction between privates liable to compulsory military training and professional officers.

PARTY AND THE OFFICERS :—Throughout the revolutionary period and for several years after 1949, there was little to distinguish between political and the military commanders, almost in every case, were important Party leaders. The Party leaders who held no direct command also played key roles in the direction of military

For Packaging, Always Use

WACO Gummed Paper Tapes

Manufacturers:—

Waterproof Corporation Private Ltd.

25/36, Imperial Chambers, Wilson Road, BOMBAY-1.

WITH

OUR WARMEST GREETINGS TO

ALL OFFICERS AND MEN OF

• ARMY • NAVY • AIR-FORCE

AND AUXILIARY ARMS

HIRJI PESTONJI (SOONAWALLA)

13/15, ARAB STREET CORNER, GRANT ROAD,
BOMBAY-8. (BC) INDIA

YOUR SHOPPING CENTRE FOR

**"SAROSH" BRAND STOVES-BLOW LAMPS,
LANTERNS & THEIR SPARE PARTS**

affairs. As a result of this, the political and military commands were inextricably intertwined and their tasks and experiences were identical to a great extent. Military commentators have not been able to fix with precision as to when tensions first appeared between the Party and the professional officers. However, they have asserted that some discord was in existence as early as 1953-54. Underlying the elements of conflict between the party and the officers were two fundamentally different points of view on the relative importance of men and weapons in warfare and consequently on the nature of the modernised army. The professional officers argued that in contrast to the revolutionary period, when primary reliance had to be placed on man, the out-come of modern war was determined first and foremost by the material resources of an army and the way in which they could be used. However, the Party did not accept this view point and immediately took steps to compel the officers to toe the Party line. By 1956, regular campaign to this effect was underway. It gathered momentum in 1957, reached a crescendo in 1958 and lasted into 1959, when highly significant changes took place in the Army High Command and fresh attempts were made to strengthen party control over the armed forces. Throughout the period, whatever the view point of the professional officers to the contrary, the Party leadership believed that, in a revolutionary army, men were more important than weapons and the human characteristics and political ideology were the principle components of combat strength... whatever the changes in the nature and the character of war, it was still politics and not technique, still men not material.

COMMAND CHANNELS :—In the initial stages Chinese Communists evolved an elaborate system of political control in the army designed to ensure the complete subservience and loyalty of their military arm to the dictates of the **Party High Command**. Party control over the armed forces was exercised through a hierarchy of **Party Committees, Political Officers, Political Departments and Party Members** ...a hierarchy which was parallel to the military chain of Command, from the highest to the lowest levels. Through these organs and functionaries, the Party directed the political and ideological education of the army, imbued all the "**fighting men**" with patriotic spirit and communist ideology, corrected whatever wrong ideas were current as well as wrong ways of working, led the army in carrying out the political line of the Central Committee of the Party and the laws and decrees of the State, and led the Party and the Youth League Organisations in the army and broad mass of officers and men to follow the orders and directives of the higher organisation and to fulfil the various tasks of the army conscientiously and resolutely. Under the circumstances, therefore, the system of leadership in the armed forces was based on the principles of '**individual responsibility of the leaders under the collective leadership of the Party Committee**'. The directives of the High Command were conveyed to the lower echelons through the Party Committees, which extended from the Military Affairs Committee to the Party Branches at the Company level. These Committees were granted powers to formulate measures relating to the implementation of the directives received from the above and to supervise their enforcement. The Communist Party Committees, at all levels in the Army were built upon the basis of '**democratic centralism**'. Except in emergencies when the leaders of units could make decisions at their own discretion 'within their competence', all matters, such as important directives and orders to be issued by higher organisation, plans and measures for military, political and logistic work, allocation of cadres etc., all had to be discussed in a "**democratic way**" at Party Committee meetings so that the wisdom of all the members could be brought together.

INITIATIVE AND CREATIVE ABILITY :—Despite the rigid party controls the Communist Chinese claimed that the officers in the Army had their own discretion in command and decision. P'eng Teh Huai explained the position by saying

that; the decisions of the Party Committee are handed over to the military commanders and the political commissars for implementation. Between these two, there ostensibly exists division of functions. One is responsible for political affairs, the other for military. In our Army both military commanders and political commissioners are leaders; they are jointly, responsible for the leadership in the Army. However, there is a division of labour between them; military commanders are responsible for the implementation of orders and directives issued by higher authorities and decisions made by the Party Committee of the same level, so far as they concern military affairs, while Political Commissars are responsible for the implementation of those concerning political work. After reaching a decision, the Party Committee is not supposed to meddle in its execution. In crucial situations, the leaders are not expected to wait for a Committee decision, but nevertheless, they are held accountable for their action. Elaborating the theme further, P'eng went on to say; "Once decision on a certain task has been reached, the Party Committee must unhesitatingly let the leaders of the unit put it into action. It is wrong for the Party Committee to interfere in routine work and to take everything into its own hands...If in the emergency of battle, the leaders of an armed unit fail to resolutely assume responsibility and fail to issue firm and timely orders, their forces of combined arms would be plunged into confusion even to the points of losing the battle. In our work too, failure of the leaders to assume individual responsibility will lead to dialottriness and state of affairs in which nobody would take charge of anything.

INTERNAL DISCIPLINE (INTER-ARMY RELATIONS) :— The opposition of the officers to the Party Committee system, which of course was never allowed to be effective, had been grounded in the view that, it was incompatible with the requirements of a modern army. In modern warfare, the officers contended, the command structure had to function swiftly and smoothly and the cumbersome party system ran counter to these vital requirements. They further contended that infusion of civilian authority in the military organisation tended to disrupt the unity of command...that the operation of modern and technically complex army acquired strict discipline and unquestioned compliance with orders, rather than, individual initiative and advice from the soldiers. In short, what a modern army needed was 'centralism' and not 'democracy'. However, Party did not accept this view point and rigidly maintained that, throughout the period, the Communist Chinese leadership had attached supreme importance to the '**man in the army**' or '**the mass line**'. The Party leadership has continued to maintain that armed forces must be under the supervision of local civilian organisation and not permit them to detach themselves from the people, violate the policies of the Party and State and commit other offences against law and discipline. Besides, on certain questions and certain kind of work, Army units must accept the leadership of the Party and competent local organisation, apart from accepting the leadership of the higher levels in the Army. This alone would enable mutual harmony and smooth working at the politico-military level. Finally, the position was summed up as under :

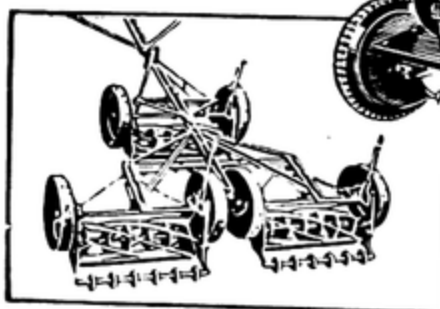
'These officers consider the rigid observance of discipline and the rigid control of the Army as diametrically opposed to the practice of persuasion and education, and also put the measures to make the army more regular in character as diametrically opposed to democracy that is unnecessary. They fail to understand the unity and the unanimity of the two things. They have the mistaken notion that if the army is to be made more regular in character, we cannot talk of democracy, and if we talk of democracy, the army cannot be made more regular. And so they exercise their powers indiscriminately and thereby seriously impair the glorious traditions of unity between officers and men, between the upper and the lower levels of the army. They regard their new status and the preferential treatment accorded to them as a sign that democracy

has been abandoned. They maintain that military science and technology of modern wars are very mysterious and in the way deny the method of the mass line. They maintain that all that is needed is officers who have been trained for along time and who, in turn, will train the enlisted men. They hold that the slogan, mutual education of officers and enlisted men, as out of date. They maintain that in modern war the many enlisted men must carry out orders much like a machine, in as much as the war era of military democracy is out of date. These comrades forget that discipline must be built on the foundations of self consciousness. Without raising that self consciousness of the officers and men, without the unanimity of their ideological consciousness and without the unanimity of their ideological consciousness and without the exemplary influence of all cadres, rigid discipline cannot be possible. The unity of the army and the people and the officers and enlisted men are manifestations of the basic make up and the essence of our Peoples' Army and they must be upheld and perpetuated. No matter how much weapons and equipment change, no matter how much strategy and tactics change, the basic essence of the army cannot and will not change '...relations between officers and enlisted men are, with the exception of the leader and the led, relationship are still the Comradely relationship based on complete political equality and filled with class love. The thought that the era when, officers were mothers 'is out of date is a sign that some comrades still retain the ideology of warlordism'. They do not want to show consideration for the enlisted men; they do not want to be patient and use persuasion.

DINCO

POWER MOWER

Smooth, efficient, easy to operate, DINCO Power Mowers are ideally suited for cutting of lawns, parks, playgrounds, golf courses etc.



ALSO AVAILABLE :
Greens (Type)
Gang Mowers

ASK FOR SPARES

D. B. SHAH & BROTHERS

71A, NETAJI SUBHAS ROAD, CALCUTTA. 1
PHONE : 22 9061 • GRAM : SUWPAHU

BIHAR GOVERNMENT'S CONCESSIONS TO SERVICEMEN & THEIR DEPENDANTS

EDUCATIONAL CONCESSIONS

- **THE GOVERNMENT OF BIHAR** have extended free student-ship in all educational institutions to the children of J.C.O's and other ranks of the Defence Forces for the duration of National Emergency. The children of the Defence personnel of these categories, who are killed or disabled in action, will be given education free even after the Emergency is over.
- **PROVISION** has been made for granting free education in the technical institutions under the administrative control of the Industries Department of the State Government to the children of serving personnel during the present emergency. These concessions are also applicable to the wards and dependants of those killed, wounded disabled and declared missing in the operational area.
- **TWO SEATS** for admission of the children of service personnel have been reserved in all the technical institutions under the Industries Department of the State Government and in the High Schools under the State Government.

ASSIGNMENT OF LAND

- **AGRICULTURAL LAND** will be settled with serving defence personnel who have done active service for at least six months and with the families of those who were killed in action at the rate of 5 acres each. Besides, 12 decimal of land are to be given to those serving personnel or the families of those who were killed in action, who have no dwelling house.

ISSUED BY
THE DIRECTOR OF PUBLIC RELATIONS,
BIHAR, PATNA.

THE DECISION PROCESS

SOUND decision is considered the very embodiment of command. The mental power, which includes the ability to arrive at sound solutions of military problems, is recognised as an essential component of fighting strength, because it is the main and parental source of professional judgment. It is in the context of sound decision alone that the whole structure of military concepts and philosophy comes to a focus and military leadership meets its greatest and severest test. It is conceded by all military theoreticians that, all the skills and techniques, and all the weapons created by science and ingenuity would be a sheer waste if the decisions as to their employment are not wisely made. The ability of the commander to make consistently sound military decisions is a result of combination of attributes...the natural talent of the individual, his temperament, his reaction in emergencies, his courage and his professional knowledge...all contribute to his proficiency and to accuracy of his judgment. The process of reaching a sound decision and developing good plan to carry it out is an art. Like all other arts, it is based on science, except in those rare cases, where there is a true genius. These decisions and plans involve matters of life and death. Naturally, therefore, above all, military decisions are a test of character requiring determination, will power and loyalty to a goal beyond oneself.

THE SPECIFIC CHARACTERISTICS:—The process of decision-making is a blend of the spirit and the mind...a blend of the tangible and the intangible...a blend of logical analysis and intuition. It has specific characteristics that cannot be conveyed to a computer or put into a set of rules. First of all, it requires a **point of view**, a **perspective** that can distinguish the appropriate from the inappropriate among all the methods and techniques involved. It then requires **an analysis of the objective**...also a logical process of thought and intuitiveness of significant relationship among obscure or contradictory factors. Consideration of the intuitive aspects of decision emphasises the **highly personal nature** of great decisions and control of great events. Further, it requires a sense of the **military worth** and relative value among the various factors to be considered...quantitative, tactical and logistical planning factors....so that the elements of cost can be related to corresponding value, and a discriminating sense of situational facts, some significant and other trivial. It requires an ability to recognize and to grasp an **opportunity**. This imposing set of requirements, undoubtedly call for knowledge of facts and theory, of insight and of character...**character, courage and integrity**...all of which are tested by the toughness and intransigence of the modern problems with all their ultimate implications of life and death. This extraordinary challenge resembles nothing else in scientific or business life. Its fulfilment requires both a combination of the Commander with his subordinate commanders.

THE SOUND PROCEDURE:—According to the U. S. Naval War College Publication, "**Sound Decision**", one of the most penetrating discussions yet written on the basic theory of military decision, the procedure most likely to ensure sound solutions is the studied employment of a natural mental process, differing in no fundamental respect from that, effectively utilized in all other human activities. The basic mental procedure remains unchanged, irrespective of the nature of the problem...be it simple or complex...its solution instantaneous or slow. The procedure is especially adapted to the needs of the profession of arms through the use of the **Fundamental Military Principle**. By outlining the essential elements involved, this Principle, a valid guide for the solution of military problems, covers the full scope of the application of mental power, as a recognized component of fighting strength.

It is more especially so during the swift-moving action of the tactical engagementwhen that moral capability to command, and mental ability to solve military problems, experience the maximum pressure of events. It is also then that, the responsibility of the commander creates an added demand for intelligent application of mental power because of the vital issues which may hinge upon his decisions. That this pressure is successfully sustained, and this responsibility effectively discharged is the goal of any system of mental training in the profession of arms. Ultimately, it is on a fundamental basis of earnest thought, mental ability, character, knowledge and experience, that finally rests the soundness of decisions.

THE INTER-WEAVING ASPECTS :—To understand the full inter-play of the forces that affect command decision, it becomes essential that the many conflicting factors and points of view are thoroughly studied and taken up to active consideration. It is because, when sometimes path of logic becomes confused, the commander, sub-consciously dreading indecision, is tempted to thrust paradoxes and contradictions aside, and on the assumption that any action is better than no action, takes important decisions on a purely intuitive basis, which sometimes work well and sometimes badly. It is because the art, the concepts and the philosophy of command involve inter-weaving aspects of concepts of decision and concept of organisation. It has to be recognised that, command decision and organisation are part of each other. No one can be understood by itself. Each is affected by changes in the others. The need for making decisions and the nature of decisions evolve out of the nature of the problems of human intercourse and conflict. In the complex and demanding circumstances so created, theory and principle do not by themselves provide the answers. They, however, do show the relative importance of conflicting forces and ideas. The relative frame-work of a formal estimate does help to insure that vital factors are not forgotten. The conceptual sequence of "analysis of objectives"... "strategy as control"... "the practical application of strategic concepts", "the basis for plans", "the foundations of flexibility" and "feasibility" help to place complex problems in effective perspective in spite of the atmosphere of confusion and technical complexity.

POLITICO-MILITARY BLEND :—In addition to the difficult problems in grand tactics, military strategy and operational logistics, that perplex military commanders in combat, top officials are confronted with many decisions in affairs that blend military, political and economic considerations. In the present context of circumstances, these officials come from diverse educational and professional backgrounds. In many cases, businessmen, who have never studied military affairs, or international politics, are suddenly thrust into positions of prominence, where they depend upon the advice and, sometimes, the initiative of Staff Assistants, who frequently have purely academic backgrounds. Besides, in the military field, decisions differ from the purely military ones, as to which particular tactics to use in a restricted combat situation through a vast variety of decisions on national and international strategy and defence structure. Further, there is a significant relation between the type of organisation and the problems of decision.

In single purpose organisation, such as is usually found in business, the objectives are simple and clear. In the multipurpose organisation found in politics, the objectives are more complex. By its association with politics, the military organisation is frequently caught between the two philosophies. This brings complex and equivocal factors into play. Thus, there is a greater distinction between purely military decision made by a military commander, acting with military authority in a military hierarchy and a general governmental or political decision by a political executive in an administrative bureaucracy, in which the lines of authority are usually uncertain and sometimes conflicting. With the industrialisation of war, and with increasing

centralisation of authority, two factors have become evident, i.e. (a) The interlocking of political decision with military decision has become more critical and evident. Cold War and various forms of guerrilla warfare require special finesse, a special political feel: to deal with contradictory and equivocal situations. (b) The military bureaucracy has increased and has become enmeshed with other parts of government. In consequence, some military decisions require elements of persuasion and negotiation quite foreign to the concept of swift, clear operational decisions required by combat situations.

THE OBJECTIVE:—As in strategy, the objective is the dominant feature of any study of decision. In time of formally declared war, the military decisions, while difficult, are less complicated than the decisions taken during cold war or in an equivocal conflict. In the first case, the military objectives can be greatly eluded by the extra complexity of the politico-economic factors, both dramatically achieved. This may not be the case in the later, because of the uncertainty as to the purpose and the pursuit of self interests which may influence all levels of strategic, political and economic action.

CONCEPTUAL UNITY:—Conceptual unity is vital to decision. The estimate of the situation in which the political military leader himself takes part is the best way to create the conceptual unity that is necessary for the development of understanding and loyal support. With conceptual unity and loyal support, great handicaps can be overcome and sound subsidiary plans can be developed with speed and assurance. Without conceptual unity, the whole planning and execution process becomes uncertain, slow and contradictory, with frustration and defeat as the probable end.

ANALYSIS OF THE OBJECTIVE:—One of the reasons why able and informed persons frequently reach quite different solutions to political problems is that, they have quite different concepts of the objectives to be achieved. In some instance, this difference in concepts may be due to clearly contrary purposes, such as occur in many political contests and conflicts. In some instances, it may be due to subtly contrary purposes or to ulterior but concealed motives. This is likely to occur quite frequently in struggles for personal or group powers in bureaucratic organisations. In other instances, men of goodwill, even having similar motivations and purposes, may, without knowing it, have different concepts of the objectives. In all such cases the result generally will be argument rather than decision. In many cases, there would be failure and frustration. These situations emphasise the need for the analysis of the objectives as the first step in reaching major decisions. Such analysis is not always easy. However, when it is well done, it provides vital guidance, not only in improving the quality and speed of the decision, but also in improving the quality of the subsequent executive action.

An important element in the analysis of objective is to express an idea as to what constitutes the attainment of the objective. Some persons, with extensive executive experience, will not accept the usefulness of this contention because, they will sincerely feel that leaders must, and inevitably, they will be guided purely by insight and intuition. They will feel that the man who must make the decision must be the man who analyses the objective and who thus knows what he is after. A great military commander might be able to do it all alone, with some help from puzzle solvers. The second-rate commander will let his staff find a solution. The latter solution may work. However, it is doubtful whether it will ever be a great solution. In operational military planning, particularly at lower levels, military decisions, be they tactical or logistical, must be both explicit as to meaning and specific as to timing. As against this, political decisions may frequently be couched in more general terms, both as to nature and

timing. Since strategic decisions are generally broad and comprehensive, and since they form the foundation for all operational planning, the analysis of the objective is essential.

CALCULATING THE RISK:—According to the final report of World War II, Admiral King of the United States has stated; "One of the mental processes that become almost a daily responsibility for all those in command is that of calculating the risks involved in a given course of action. That may mean the risks of losses in contemplated engagements, the risks of success or failure dependent upon correct evaluation of political conditions and a host of others." Elaborating his view point, Admiral King has opined that, calculating risk does not mean taking a gamble. It is more than figuring the odds. It is not reducible to a formula. It is the analysis of all factors which collectively indicate whether or not the consequences to ourselves will be more than compensated for by the damage to the enemy or interference with his plans. Correct calculation of the risks by orderly reasoning is the responsibility of every officer who participates in combat and many who do not. According to B. H. Liddel Harts; "A Commander must not lose his own balance. He needs to have the quality which Voltaire described as the keystone of Marlborough's success.....that calm courage in the midst of tumult; that security of soul in danger, which the English call, 'cool head'. But to do this, he must add the quality for which the French have found the most aptly descriptive phrase, *Le sens du praticable*...the sense of what is possible and what is not possible, tactically and administratively. It is what we mean when we talk of realism. The combination of all these guarding qualities might be epitomised as the qualities of cool calculation. Creative imagination is an essential characteristic of a genius in the military as well as other spheres. When coupled with dynamic energy, it produces the executive genius...when balanced by cool calculations, it makes a great Captain, and when he loses that balancing power, through over-weening ambition, his dramatic downfall creates another great legend... that like the Sirens song lures the pilots of future generation in turn on to the rocks.

ENCOUNTER VERSUS SET-PIECE DECISIONS:—The broad field of military decisions contains five areas where clear distinctions are recognised. These areas are: "decision of encounter" versus "decisions that are set piece", the "puzzle" versus the "difficulty", "capabilities" versus "intentions" "individual decisions" versus the "group decisions" and the related topic, the "Doctrine of Completed Staff Work."

Military theoretician have conceded that the range of military decisions may extend from instantaneous resolve to meet an emergency to the conditional intentions of a distant future. According to Professor Simon of the United States, as quoted by William Reitzeer, 'It is useful to talk about decisions of encounter (instantaneous) and decisions that are set piece (conditional upon intentions of distant future.) The notions behind this distinction are familiar. On the one hand, these are decisions required because a situation develops....It is made to occur either by the enemy, or by the weather or by something else in which immediate action is called for, and a decision has to be made as to what that action is going to be. This is the decision of encounter. As against this, the set piece decisions occur in situations in which there is a lot of time to plan out the future action. Military problem situations can obviously be classified as they give rise to encounter decisions or set piece decisions. It must, however, be borne in mind that encounter type decisions are more characteristic of the lower range and set piece of the higher range. However, the two types are not wholly unrelated. Set piece decisions often condition what can or cannot be

done in an encounter situation and encounter decisions are often called for in the course of developing set piece decisions. Further, set piece decisions, even when called "a commander's decisions", tend to be produced by an organised, co-operative process. Decision of encounter tend to be the decisions of responsible individuals. Although each type calls for a different kind of response, yet members of a military organisation are invariably called upon to make both kinds, often to shift from one kind to the other.

Encounter decisions, given the short-term requirements, obviously depend almost exclusively on habitual or routine responses. The trained and indoctrinated individual has a repertoire of the possible actions that might be taken in the circumstances. The stages in the decision process in this context generally consists of: (a) A quick professionally guided identification of the particular kind of a situation that is encountered. (b) A quick checking by professional judgement of possible actions against possible contingencies and (c) The almost automatic selection of the most credible course of action. Professor Simon of the United States, while commenting upon these stages has pointed out that, both the list of actions and the check list of side effects tend to be specific to particular classes generally for encounter decision-making....Most of what is done to get people ready to act in situation of encounter consists in drilling these lists into them sufficiently deeply so that they can be evoked quickly at the time of decisions. The corollary to this is that, this trained triggered response must not be interfered with by consciously taking thought or by any effort at orderly problems without loss of time...Because he is mentally prepared, he will see things in their true proportions...coolly chose the same course of action which he would adopt if he had time for careful deliberation. As against this, the set piece decisions call for an organised, orderly and logically staged response. They require looking at the problems in an orderly sequence of steps. This sequence is the same for all kinds of set piece situations. It has general rather than particular applicability. The steps in the process, and the relative absence of time pressure, makes it possible to check error at all stages.

PUZZLE VERSUS DIFFICULTY. This is another analytical distinction that deals with a fundamental source of confusion in ordinary talk about decision making. This distinction concerns the differences between performing calculations (finding exact answers) and making choices (picking a course of action to gain an objective). In military parlance the words for the two are "puzzle" and "difficulty". In the military parlance, a puzzle is an uncertainty that can usually be solved correctly in one way or the other. It always has a solution and the solution is an absolute one. Once the solution is found, its correctness can always be checked by reconstituting the puzzle and solving it again. As against this, difficulty is another kind of certainty altogether. It cannot be solved in the sense that a puzzle can be done. It can be surmounted, overcome, reduced, avoided, ignored, but it cannot be solved. There may be all sorts of ways of dealing with and getting out of difficulties. Some of the ways will certainly be more efficient than others. However, none of the ways will be absolutely and demonstrably correct.

Military experts have themselves conceded that, not all solutions fall under one or the other of these headings. Many uncertain situations, especially those that give rise to set piece decisions, involve a mixture of choice making and puzzle solving responses. There are difficulties in which considerable use is made of calculations (puzzle-solving) in order to overcome the difficulty. This mixed type is frequent occurrence in military experience, for given the special character of specifically military problems, it is inevitable that the resulting difficulty should include factors that are puzzle to which correct answers, when worked out, will contribute to finding a better way out of the

difficulty. In fact, when facts of difficulty can be legitimately treated as puzzles, the substitution of one type of response for the other is very helpful in the decision process. It works effectively in all set piece decisions. This kind of substitution has been a marked feature of the intellectual and organisational developments of the last two hundred years. However, military experts have cautioned, that the legitimate success of puzzle-solving responses can easily lead to their illegitimate extension to the genuinely non-measurable and non-calculable aspects of a difficulty. When an uncertainly situation involves human preferences, human values and humanly defined objectives, it is more than a puzzle and it will never be effective...that is satisfactorily overcome by dealing with it as if it were a puzzle. It is policy-makers, not puzzle solvers, who have the last word in a decision that is concerned with a difficulty. **Command responsibility when it is not concerned solely with the decision of encounter, can generally be equated with the role of the policy maker, while staff work can generally and more usefully be equated with puzzle-solving.**

CAPABILITIES VERSUS INTENTIONS :—According to U.S. military experts, it was in 1936, that steady tendency to sharpen up distinction between capabilities and intentions began. However, it was in 1956, that black and white contrast and mutually exclusive definitions stage was reached. The position has since then stabilised in favour of the contention that any study of decision-making, as a process of dealing with uncertainly, makes it clear that the capabilities and intentions of an opponent are simultaneously taken into consideration. A wise and competent decision maker will not elect one as the basis and exclude the other. The real thing to look for is the weighting that is given to two inter-locking sets of factors. Practice has suggested that this weighting, not only may, but perhaps, would differ from situation, to situation as well as from the level of command responsibility at which the decision is made. It would also differ, depending on whether a situation is regarded and treated as the one calling for a tactical (short term) or a strategic (long term) choice of a course action. Opinion now seems to have crystallised that, at levels where national security decisions are made, judgements about enemy intentions are, not only heavily weighted, but are particularly essential to making choices. The reverse may very well be the case at all levels where isolated one-shot combat situations are the usual type of uncertainty.

It must be borne in mind that doctrine in respect to capabilities and intentions cannot apply in a rigid form over the full range of uncertainties. In so far as a military uncertainty situation corresponds with a **zero-sum game**, a capabilities basis is a logically sound approach, for it would lead to a choice that can be mathematically demonstrated to produce a minimum safe result. However, most military situations, particularly because they link together to form the larger whole of a campaign or a war, rarely take the simple form of zero-sum game. Usually, both parties in a military situation have purposes (objectives) which they wish to achieve and these introduce utility values into their choices of the courses of action, with the consequent effect of forcing judgement to be made consciously or unconsciously about intentions. Even if military doctrine emphasise the unreliability of such judgements and rules work out as dangerous, there is a justifiable suspicion that human psychology and organisational necessity would bring them in a disguised form through the back door. Even in ordinary life, injunctions against dealing in intentions cannot be followed. As a natural process, therefore, possibilities and probabilities in any situation are considered before actual action is taken. Since this is the most likely thing even in the most highly formalised and controlled decision-making process, and since this alone can serve to make military decision process more flexible and more realistic, a careful study of the meaning of **probability** and a clear understanding of the role of an **assumption** becomes absolutely necessary.

It is generally recognised that, to deal in intentions is to work with probabilities... to deal with probabilities is to make assumptions. The main danger in doing these things is to do them unconsciously and without an adequate appreciation of what is being done. Military commentators are agreed that this normal way of considering the probability of one intention, rather than another being acted upon, cannot be rejected out of hand, as a method of rigidifying and limiting the decision process. Actually, they have contended that the method serves to clarify and make explicit the assumptions on which decision must, in part, inevitably rest. Assumptions enter into decision-making whether a study of capabilities or a judgement of intentions dominates the process. However, assumptions are not always very clear. The more an assumption is sharply defined and its exact content is specified, the safer it is to admit it into the process. A frank recognition that one does partially deal in intentions, is bound to result in more clearly formulated assumptions, and if this is achieved, there is no particular harm in considering intentions and capabilities simultaneously when estimating a situation and weighting alternative courses of action.

THE DOCTRINE OF COMPLETED STAFF WORK:—It has been conceded by military theoreticians that military decisions are not easy to arrive at. Ever since the German General Staff, the world has been seeking tools, or methods or building blocks—which would help the commanders arrive at sound decisions. These tools involve the use of staff and the use of a firm for an estimate. There has, during this period, arisen a practice, a legacy maintenance of a sort, which is generally referred to as the 'Doctrine of Completed Staff Work'. According to Rear Admiral Henry E. Eccles of the United States Navy, the Doctrine of Completed Staff Work is generally known to all military men. However, it is both controversial and important. In the current military parlance, the doctrine is defined as the study of a problem and presentation of its solution in such a form that only approval or disapproval of the completed action is required. Generally, the doctrine requires that the Staff Officer should, (a) Study, write, re-study and re-write, (d) Present a single co-ordinate proposed action...not equivocate; (e) Not present long, memoranda or explanations, for correct solutions are usually recognisable and (f) Advise the Chief what to do, not ask him what to do.

Despite the vital importance of staff work in military decision, two distinctions are made. Generally, routine and administrative problems are considered appropriate for staff, because of such nature that clear-cut alternatives can be presented and definitive action can be taken with a clear and specific evaluation of the consequences. In these cases, the commander merely approves the solution, sends it back for another try. Usually in routine matters, the commander does not take any active part in the staff discussion. Presumably, his general ideas are known to the staff and provide whatever guidance is necessary. As against this, in matters of major strategy and statecraft, the staff can and must assist the commander. However, it is essential that the element of experience and personal responsibility of High Command be brought to bear upon every stage of decision. The staff provides information and, perhaps suggestions but the creative element is so highly personal that it is almost inseparable from the ultimate responsibility. This situation emphasises the enormous responsibility of the High Command. However, the problem exists to a progressively lesser degree down through the whole chain of command and each commander has to face up to it, in each case the commander has to be guided primarily by his own intuition when he decides in which problems he will involve himself and where he will abstain from personal involvement in the decision. Since this is a matter of intuition and personality, opinions differ widely. Commenting upon the doctrine of completed staff work, Rear Admiral Thomas V. Robinns Jr. of the United States Navy has observed that; 'The basis of doctrine would seem to be that, all thinking needed to arrive at a decision will have been done by the Staff. At this point,

the High Command will only have to make the grave decision, 'yes' or 'no'. In my opinion this is travesty of the proper way of arriving at a military decision... The fact that the decision should be that of the High Command, and of no one else, is, I think, vital; As the commander receives an order, it is his responsibility, and his alone, to study that order. He should study it himself to the point where he himself perceives the objective. The commander should also study the order deeply enough for him to understand the implications of actions to be undertaken by his own force towards the achievement of his objectives or goal. The High Command should then, and then alone, call in the Staff and the assistants and tell them to get busy. They should not devote themselves to the pedestrian work of filling out a form. They should be imbued by the commander with his will, with his prescience, with his intuition and with his character. It is at this point that the great military commander must spawn the inception of a great military decision. It is here that the commander must outline the quality of military efforts he wants. From here on, it may be the job for the Staff to do two things. First would be to solve those features on an estimate which are termed as puzzles. The second would be in the field of analysing and overcoming difficulties. Included in this effort would of course be the exposition of possible course of action on the part of the enemy and of, own forces. In the later realm of the solution and the overcoming of difficulties, the personality of the commander and his intuition and professional thinking would play a major part.

A LOOK AT EXCELLENCE

AND THE "ELEPHANT" BRAND THAT CREATED IT



- IT IS AVAILABLE IN PLEASING COLOURS AND ATTRACTIVE DESIGNS
- IT CAN WITHSTAND THE ROUGHEST HANDLING

ALSO AVAILABLE FOR A VARIETY OF OTHER USES

● ● ●

LEATHERCLOTH PROCESSORS & PRINTERS

16. MOGUL LANE, MATUNGA ROAD, (W.R.)

Phone: 455301—02

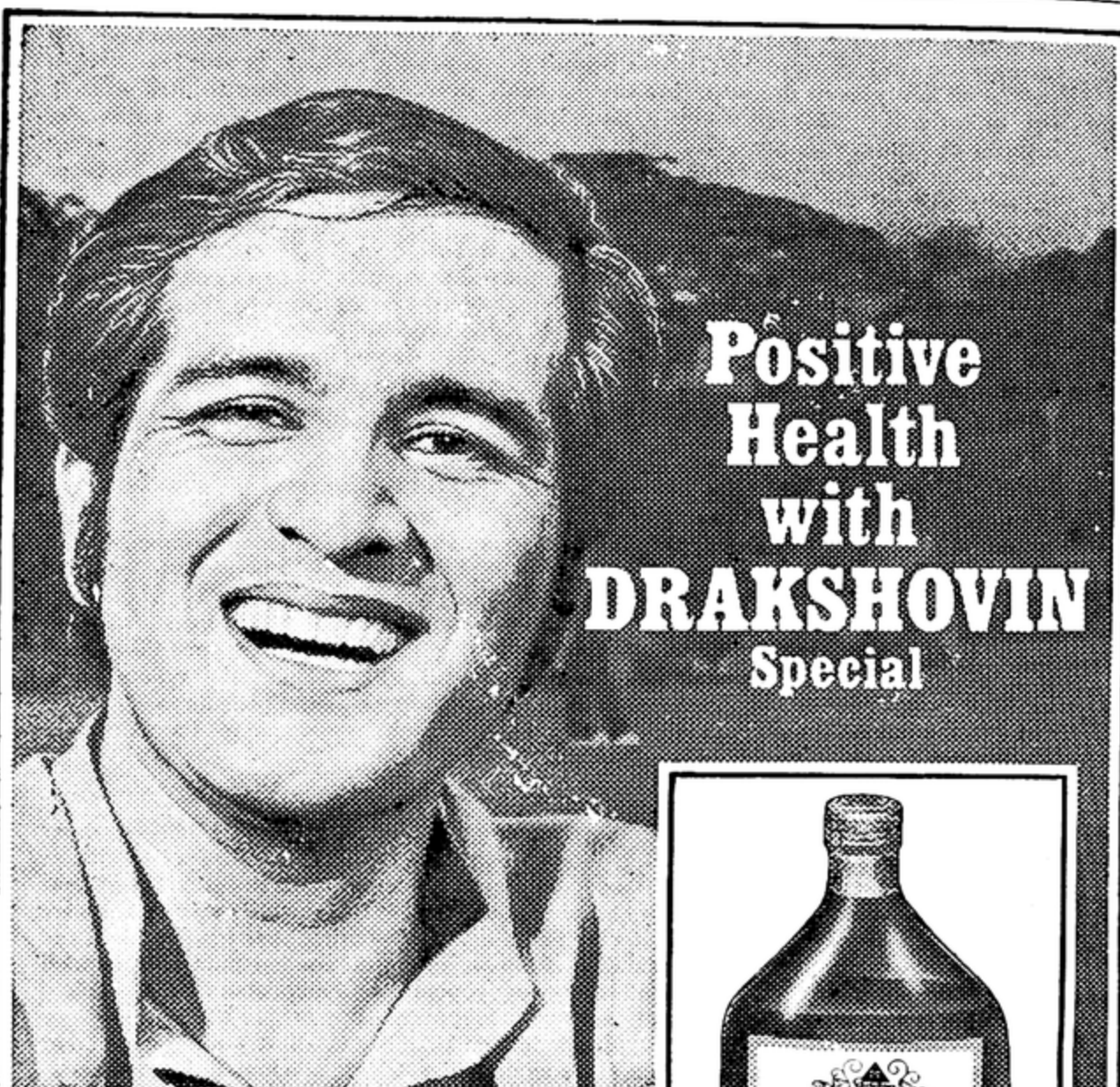
BOMBAY-16

Grams: "INDLEATHER" Bombay.

THE SOVIET VIEW POINT:—What is a decision and what makes up its essence and content? In the Soviet concept, a decision is the result of a profound analysis of the situation on the basis of which the subordinates receive the information necessary for organising the battle, for preparing sub-units to carry out the combat missions and for controlling them in the course of combat actions. Essentially, therefore, a decision means that the commander defines the concept of the forthcoming actions and the ways of its fulfilment. The conception of actions being the main idea of a battle, it determines the type of the enemy and the ways and means to defeat him. It further determines the direction of the blows and the order in which the available forces and weapons have to be employed to destroy the objectives and to manouvre them into the course of fighting. In essence, therefore, the type of enemy, (his forces, his dispositions and character of likely actions) and how to destroy him, the battle formations, the sub-units, combat missions and order of co-operation, the sum total of these questions and equations makes up the content of a decision.

In the Soviet concept, the working out of decision is an intricate creative process, requiring of a military commander comprehensive military knowledge, experience strong will and tactical maturity. In taking a decision, a military commander is obviously faced with a number of difficulties in that he has to compare and analyse both known and unknown facts and information. This then means that, in order to make a well founded decision, the commander must have a thorough knowledge of the laws of the armed struggle. He must be able to foresee the course of events. It is particularly important that he knows the enemy, his tactics, his weapons, his methods of warfare and his weak and strong sides. Since battles take place on certain times of the day and night, in certain meteorological conditions, a correct consideration of all these factors is vital to taking sound decisions.

Having taken and announced his decision, the commander then has to apply all his energies and organisational abilities to put it into effect. He has to ensure that his subordinates understand their combat missions correctly, and are confident of the possibilities and necessity of carrying them out, acting boldly, conscientiously and resolutely, ready and prepared for self-sacrifice. To ensure that his decisions are carried out by all under his command, a commander has to use his authority as well as his personal example. History of wars contains quite a few combat episodes when the commander inspired his subordinates with his personal example to carry out the decisions adopted, radically changed the course of battles and gained upper hand over the enemy. However, the most effective method by which a commander can tenaciously and firmly realise his decision are the skilful employment of the forces and weapons at his disposal, continuous and flexible troop control, timely execution of manouvers for the purpose of delivering surprise blows. Battles take place, not only in space but in time as well. Their durations are counted in minutes, hours or even days. During this period, the warring sides act in accordance with their respective plans. Clearly, the change from one type of fighting to another requires different methods of action and, therefore, new decisions each time. The fluidity and high manoeuvrability of modern battles demands that the commander treasures each second and brooks no delay in taking his decision. The commander has to realise that, even the most competent decision would prove, not only futile but disastrous, if it is taken too late or is brought to the subordinates' knowledge when the situation has already changed.



**Positive
Health
with
DRAKSHOVIN
Special**

For bubbling health, there is nothing better
than DRAKSHOVIN Special.
DRAKSHOVIN STIMULATES APPETITE,
IMPROVES DIGESTION, RELIEVES
TENSION AND PROMOTES SOUND SLEEP.

There is health in every sip of
DRAKSHOVIN Special.
DRAKSHOVIN tops in taste too!



DHOOTAPAPESHWAR INDUSTRIES LTD., Panvel, Bombay

CHAPTER V

FUNDAMENTALS OF INTELLIGENCE

.... MEANING, PURPOSE AND MODUS OPERANDI

THROUGHOUT the period of history, authors and architects of military operations have claimed that foreknowledge of the enemy might and mind, his capabilities and his intentions, his elements of force and vulnerabilities, without the enemy having any idea of this effort, is the real key to victory on the field of battle. In this context, the importance of intelligence and communications, as a means to acquiring foreknowledge about the enemy...foreknowledge to serve as a trustworthy guide for top-level decisions on policy and actions, both in the process of preparing for a war and in the event of war...has never been overstated. Actually, the desire for such intelligence has all along been rooted in the very instinct for survival. The existence or absence of adequate and efficient intelligence services, has, therefore, been crucial to the very spelling of the difference between victory and defeat.

Till the advent of the atomic age, the neglected intelligence, and miscalculations resulting from it, could lead a country only to serious debacles and even to partial defeats. It was because the character and tempo of wars was such that, countries lagging behind in this vital field of activity, could still mobilise in hurry and, while holding off the enemy, build up their weapons production and get ready for the final showdown. The introduction of nuclear weapons and ballistic missiles, capable of wiping out whole cities and industrial centres in a single lightening attack, radically changed the nature and character of war. In consequence, the time element which previously allowed countries lagging behind to catch up with the enemy, was almost completely wiped out. There was no longer any margin for error. With the development of space exploration, the needs of intelligence and communication created further tensions. Space exploration has already turned out to be space warfare...a warfare based primarily on intelligence and communications...only distantly related to the earthly control of situations and areas. Yet another element which generated further tension was the unprecedented importance that cold war and guerrilla warfare grew to acquire. Under the present perilous conditions, therefore, no power which is determined to survive, can possibly allow itself to fall behind its potential enemy in strike or retaliatory power based on exact and reliable foreknowledge of the enemy.

VERSATILE COIR

* * * DEEP PILED CANNATIC PILE CARPETS IN
LOVELY SHADES AND DESIGNS

* * * SUPERIOR HINDUSTAN COIR POWERLOOM
MATTINGS IN GLORIOUS PATTERNS AND
DESIGNS

* * * SPRINGY, COMFORTABLE AND COOL
RUBBERISED COIR PRODUCTS

AND

A VARIETY OF OTHER PRODUCTS LIKE
DOOR MATS, SPORTS GOODS, HAND
BAGS, TEA LEAF BAGS ETC.,

FOR YOUR REQUIREMENTS

PLEASE CONTACT:—

SECRETARY, COIR BOARD, COCHIN-16.

OR

VISIT ANY OF OUR SHOW ROOMS AND SALES DEPOTS.

AT:

- | | |
|---|---|
| 1. 16-A, Asaf Ali Road,
NEW DELHI.
(Telephone No. 271388) | 2. 1-A, Mahatma Gandhi Road,
BANGALORE-1,
(Telephone No. 51216) |
| 3. 22, Loudon Street,
CALCUTTA-16.
(Telephone No. 445287) | 4. 1/155 Mount Road,
MADRAS-2.
(Telephone No. 85587) |
| 5. 5, Stadium House,
Churchgate,
BOMBAY-20.
(Telephone No. 295212) | 6. Coir House,
M. G. Road,
COCHIN-16,
(Telephone No. 31807) |

EARLIEST SOURCES:—In every age, in every kingdom, in every state, informers have played a key role as one of the means by which rulers have maintained their power over the ruled and the nextrernal enemies. The earliest sources of intelligence and intelligence gathering, in the age of belief in supernatural intervention in the affairs of men and nations, were the prophets, seers, oracles, soothsayers and astrologers. Since gods were supposed to know ahead of time, what was going to happen, it was considered quite logical to seek out Divine intentions in the inspirations of holy men, in the riddles of oracles, in the stars and quite often in dreams. This was despite the fact that the information so sought and acquired was wrapped in riddles and contradictions and very often, was either ambiguous or unintelligible.

ANCIENT CHINA AND INDIA:—Western commentators themselves have conceded that, in the days of remote antiquity, East was much ahead of West in the matter of intelligence and intelligence gathering. They have further conceded that the very best of espionage practiced in the West in those days was not with the same degree of sophistication as in the East, nor was there in the West, the same sense of craft or code of rules, so that one generation could build on the experience of the other. They have most readily granted to **Sun Tzu, the ancient Chinese military philosopher**, the credit for the very first remarkable analysis of the ways of espionage and the very first recommendations for organised intelligence services. As early as 400 B.C., Sun Tzu rejected the oracles and seers, who may well have played an important role in the earlier epocs, and took a more practical view. He took the stand that, what was called reliable and trustworthy foreknowledge, could not be elicited from spirits nor from imaginary calculations. It could only be done by men who knew or could know enemy situations. In his scheme of organisation and administration of intelligence services, Sun Tzu, not only listed the kind of agents to be employed, but he also commented upon counter-intelligence, of psychological warfare, on deception, on security, on fabricators, in short, on the whole craft of intelligence. The position in India, by about the same date, was in no way inferior to that in China. This is evidenced by the most uninhibited manner in which the organisation of secret services and secret operations was recommended and the use of secret agents for a vast variety of purposes was prescribed in **Kautilya's "Arthashastra", the epic work on statecraft**. Kautilya asserted that, for the sake of protecting the four Varnas, the King was perfectly justified to use secret practices and secret services against the unrighteous. While laying down an elaborate system of secret service establishments, he specifically mentioned **Samstha**, the members of which were generally stationed in a single headquarters and **Samcaras**, the members of which moved from place to place, according as their services were required. He further divided the **Samsthas** into five kinds and **Samcaras** into four. Both these categories of agents were expected and required to work in foreign countries. However, there was also a special class of agents, the "**Ubhayavetana**", who could be in the pay of both the national and the enemy country, but working wholly and exclusively to the good and advantage of the country of his origin. In the days of Kautilya **Envoys** were required to play the role of dignified spies and secret agents.

MIDDLE AGES:—During the middle ages, it is claimed, that intelligence services, in the West had acquired quite a reasonable standard of dependability. For instance in 1066, **King Harold** of England is credited with the necessary foreknowledge of **William the Conqueror**. The King had himself been in Normandy and had seen the Norman Army in action. He knew that William was planning to attack. He had also estimated the planned disembarkation date and the landing place with great precision and a very good guess about the number of William's troops. His defeat, it is claimed, was not due to intelligence deficiencies. It was due to his troops being war-weary. Historians are, however, not agreed that these Western services

even at this stage, were of the same standard as in the East, particularly in Central Asia, where the Mongols were beginning to emerge as masters of the art of war, both open and secret. According to these historians, there was nothing in the entire West in any way comparable to the intelligence machinery under **Changez Khan** and **Taimur**. Besides, even at this date, the Western intelligence services were inadequate and prone to committing many serious mistakes in regard to the East. For instance, European rulers were not very well informed about the **Byzantine Empire** and the **Eastern Slavs**. Their knowledge of the Muslim world was also very inadequate and they were almost completely ignorant of anything that went on in Central Asia. Some Italian merchants of the time, it is claimed, had gathered considerable information about the East. Unfortunately, they seldom had a chance to pass it on to the people who determined Europe's Oriental Policy. The Popes disliked the merchant's willingness to trade with the enemies of the Faith and kings had little contact with them.

EMBASSIES AND THEIR ROLE :—It was only in the fifteenth century, when the East was in comparative decline, that the Italians emerged as the first of the European powers to contribute significantly to intelligence collection by establishing permanent embassies abroad. The Envoys of Venice were especially adept at obtaining strategic intelligence and many of their reports proved to be of very high quality... full of accurate observation and shrewd judgements. By the sixteenth century, most European governments had followed the Italian example. Further, with the rise of the nationalist and religious struggle during the period, the first real specialists in intelligence had also begun to appear on the Western scene... **Ministers and Secretaries of Cabinets** who devoted much of their careers to organising the collection of secret information. Because of the frequency of internal dissensions and civil strife during this period, a distinction had also begun to be made between foreign intelligence and internal security. Although it was still too early for the existence of two separate Services with distinct responsibilities that came after, yet it was a period in which spies at home were as important as spies abroad...all of them manipulated by the same hand.

MILITARY INTELLIGENCE :—It was in the late eighteenth and early nineteenth centuries that there emerged an ever sharpening distinction between the work of internal security and the collection of foreign intelligence. All major powers, therefore, had separate organisations under separate experts entrusted with different tasks. The reason of course was the growth of internal dissidences, the threats of uprisings, and revolutions from within, which threatened the very stability and power of the great autocrats and imperial systems. Gradually, however, the large and aggressive armed forces caused the emphasis on foreign intelligence to be placed primarily on its military aspect and responsibility for its collection tended to be taken over increasingly by the armed forces themselves. Herein lay the beginnings of what later on came to be known as **Security and intelligence Arms of the Armed Forces**. Beginning with this period, and upto the outbreak of World War I, most European armies had a single Intelligence Service under the aegis of the General Staff, which ultimately became the major intelligence Arm of each country. However, political intelligence was still left to diplomacy.

MASS ESPIONAGE :—Upto 1871, Prussia was an exception to military intelligence services that had developed in other European countries. This was primarily because the power hungry, though gifted, **Willam Stieber** had kept the reins of, both Prussian Military Intelligence and of the Prussian Secret Police, in his own ambitious hands. However, he was the author and architect of the first exercises in mass espionage....the method of saturating a target area with so many spies that they could hardly fail to procure detailed information on every aspect of an enemy's military and political status. These networks were also a kind of fifth column and

helped soften the morale of the civilian population by inducing fears of the coming invaders and shaking their faith and committance in their own government. The method was destined to play vital...almost decisive...role in intelligence gathering and even in breaking up the hostile governments without combat in later years.

INTERNAL SECURITY SERVICES :—The size and power of internal security services, as and when they came into the existence, was governed by the extent of suspicion and fear of the ruling cliques. Under repressive and autocratic rulers, secret police organisations generally blossomed and tended to permeate every element of popular and national scene. During the nineteenth century, Russia where a retarded political system stood in constant threat of its own mases, its liberal leaders, or the dangerous ideas and influences of its neighbours, had the most powerful organisation of this type in Europe. In earlier history, the Tartars and other Steppe people had used such organisation to ascertain the strength of the garrisons within the walled Stockades (Kremilins) of the Russians. As a result, Russians had become congenitally suspicious of anyone seeking admission to the walled cities, fearing, that their real mission was intelligence. The tradition of attaching a priestary (literally an attached object) to a visiting foreigner so that he could be readily identified as such, goes back to at least the sixteenth century. There is also a long ancestry for surveillance and guided tours in Russia. In the seventeenth century, when Russians began sending their own people abroad for studies at the foreign universities, they usually sent trusted persons along to watch and report on the groups of students. The custom of attaching secret policemen to delegations attending international conferences also had hoary antecedents. (See also "Soviet Intelligence Set-up").

PRIVATE SERVICES :—One of the most significant innovations in the field of intelligence gathering during the nineteenth century was the vital role played by the private firms (cover organisations) particularly the banking organisations. Once they had attained position of some power, they benefitted their client, as well as themselves, by their superior intelligence gathering abilities. To these were later added the capabilities of stock exchanges. Fluctuations in national productivity capabilities and the size, and type of international trade were utilised to provide safe guess work of the shape of things to come.

WORLD WAR I :—Great powers of Europe entered World War I with intelligence services which were in no way commensurate with the might of their armed forces or were equipped to cope with the complexity of the conflict to come. This was true of both sides...the Allies and the Central Powers. The war, however, resulted in extensive and elaborate advances and Intelligence Services had a number of innovations in espionage. One of them was the use of radio messages. This was made possible by signals and breaking codes and ciphers. Further, the preservation of neutrality by certain strategically located countries, like Sweden, Norway, Holland, Switzerland, gave rise to the espionage tactics of spying on one country via a second country, despite the best efforts of the neutrals to prevent such use of their soil. This was a technique which was later used in peace time also, particularly in Europe. Another development during the war was the Japanese Intelligence Services which became more highly efficient than most other European services. They actually threatened to re-establish the supremacy of East over West in the field of intelligence.

BETWEEN THE WARS :—The period between the two World Wars saw further extensive proliferation of intelligence Services and growing complexities in their organisational and operational structure. The targets became increasingly technical and the world a much more complicated place. The new dictatorships in Germany, Italy, Japan and the U. S. S. R., converted their intelligence services into major instru-

ments abroad for probing thrusts. War by internal subversion, based, mainly on intelligence and espionage and politico-diplomatic expansion, emerged as a new and dominating war technique. Herein were found the first beginnings and military uses of massive fifth columns. At the same time, other countries, particularly England, took on enormous new responsibilities in intelligence work to face successfully the threat posed by the totalitarian intelligence services. All this, along with several other innovations, was put into actual practice during the war.

WORLD WAR II:—At the beginning of the Second War, the intelligence demands and organisations were geared mainly to the numerical strength, etc., of the opposing armed forces, together with the output of weapons from their industry. During the war, however, the intelligence Services of Germany were found developed to their most sinister perfection, covering a far wider canvas than ever before. As such, they had many objective lessons to offer. The victories scored by Germany in the opening phases of the war were, to a large measure, due to the successful functioning of her Intelligence Arms, making it impossible for the enemy to stand up and fight. On the allied side, the war-time co-operation in the field of intelligence, emerged without a parallel in entire history and it contributed in a large measure to the creation of unity of purpose in the free world, and provided certain case histories which rank among epic landmarks in the annals of military intelligence.

POST-WAR PERIOD:—The post-war period was marked by the emergence of free countries and each having its own intelligence gathering set up. However, the United States of America and the Soviet Union emerged as the two super powers. Their intelligence geallueing set ups were the most powerful and decisive in the field. They virtually subordinating the vilelligence set ups of other countries. Immediately after the war, Soviet Union seemed to be having distinct and positive advantages in the field of intelligence. Her advantages were later increased many times over when she succeeded in taking a number of other countries, including China, into thie orbit of her political and ideological expansion. Besides, at the close of the war, Communist Parties existed only in forty-three countries. Communist parties then sprang up in almost all the countries, even outside the Communist block of countries. This appeared to be the greatest international conspiracy in the history of the world. Operating from behind the mask of a Political Party and unremittingly making its influence felt amongst the masses and thereby tilting the plitico-military barometer in favour of the Soviet Union. In addition, there was the so-called popular support by the progressives and the fellow travellers in all countries working under various guises and garbs and making the Soviet presence felt in all walks of life.

United States of America, the other power giant, on the otherhand, had no such international organisation, national parties or fifth column at her disposal. There were of course those who believed in freedom and democracy and free enterprise, and to that extent were opposed to totaliarianism. They generally supported US friendship and US policies. However, they did not act as fifth columnists or active collaborators, the way Communist Parties did. Further, the US conceded that the Communist range of tactics in cold war were broader than mere covert action and political subversion. The main reliance of the US was on her own intelligence assets and the intelligence assets of the friendly and allied countries, including those under Communist attack or threat. Apart and aside of the Intelligence Services, the US depended heavily on military, economic and technical aid to weak, vulnerable and economically developing countries, as a protective shield against Communist secret war techniques. However, this failed to line up these countries behind the US. Most countries receiving aid refused to receive the political strings. While utilising the aid, they sought to build up their own independent existence. They preferred to be friends with dignity and honour, but not satellites.

For several years after the war, Communist countries and communist parties all over the world, acted in absolute concert under the overall command and leadership of the Soviet Union. Because of the impenetrable and invulnerable protective shield provided by the Soviet Union, these countries were nicknamed "iron-curtain countries". The first crack caused by Yugoslavia was minor and it did not materially alter the situation. The major crack came only when Soviet Russia and Communist China fell apart and the communist world ceased to be monolithic. Immediately, intelligence experts in the free world began to feel that the balance of intelligence gathering would gradually shift in their favour. They were filled with robust faith and confidence that the intelligence apparatus of the two Communist giants would be weakened by their mutual hostility and hostility against the rest of the world. They also saw the possibilities and probabilities of one of them increasingly inclining towards the free world to offset the real or imaginary advantage of the other. However, whatever the merits or advantages, real or imaginary, of this rift and hostility between the two communist giants, the handicap at this stage, and for several years following, was that Communist Chinese were not accorded their rightful recognition at the world level. It is only that now the Communist Chinese have been granted the admission into the United Nations and other world forums as the sole representatives of the Chinese people and their Government that the world will know real China and her capabilities in the field of intelligence and espionage'...It is only now that the world will get to know the nature, character, organisation, administration and working of the Chinese Intelligence set up at the national and international level.

INCORPORATED IN ORISSA.

ORISSA TEXTILE MILLS LIMITED

Regd. Office :—P. O. CHODWAR, CUTTACK.

Head Office :—33, CHITTARANJAN AVENUE, CALCUTTA-12.

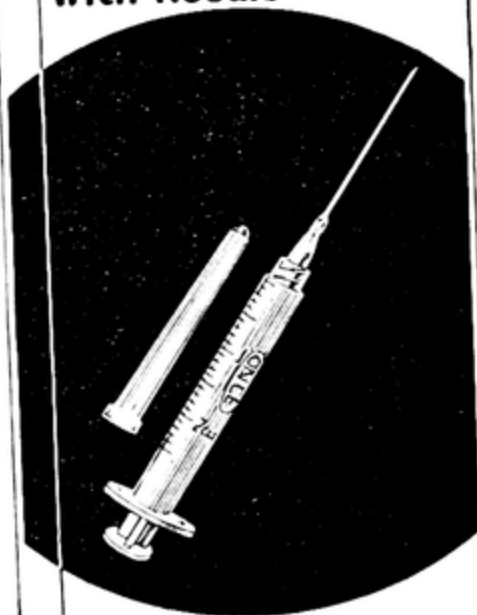
P. O. Box:—7843

Grams : "TEXORISA".

Telex. No. 621-584.

Phone : 23-3456-58.

**DOCTORS!
CARRY
THIS STERILE
PYROGEN FREE
SYRINGE
With Needle**



ONCE

Ready for use.
STERILISED AND PACKED
IN AIR TIGHT POLYTHENE
SACHET. NO WASTE OF
TIME IN STERILISING.
USE ONCE AND DISCARD.
OR FOR FURTHER USE,
STERILIZE AGAIN

**BHARAT
LABORATORIES**

534, SANDHURST BRIDGE
BOMBAY-7.

Trade Enquiries
to Sole Distributors :

**AASHA
PLASTICS**

Block F/8, 1st Floor,
Mahalaxmi Wollen Mills Compound,
Shakti Mills Lane,
Bombay-11.

For free delivery
anywhere in Bombay Island
of minimum 20 pieces
ring - 379322.

INTELLIGENCE COLLECTION:

THE official American definition of intelligence is "evaluated information". This evaluation simultaneously concerns both credibility of the information already in hand and an educated guess as to the new information and the reliability of the source. However, according to American experts on the subject, this definition does not touch upon the most important element, which covers and which also explains the true objective of all secret operations. According to them, the objective contained in the secret intelligence . . . the emphasis is on the vital word "secret". They have further contended that the need for intelligence is the effect, not the cause. It is the result of situations of human conflict or competition which, between nations, runs the gamut from the inescapable friction and rivalries among allies, through the weary manoeuvres of potential enemies and the covert clashes of the secret war, to open hostilities. Whatever the degree, the essence of the situation is the human conflict. In any such situation, the most potent and useful information about an opponent is that, which he does not know you possess. It also means, that intelligence to be secret must be obtained in such a way that the opposition does not know what is being obtained. Thus the meaning of 'secret' in phrase 'secret intelligence' is precise and specific. It is this very precise meaning of the word secret in secret intelligence which dictates the forms of the fundamental characteristics and techniques of secret intelligence operations.

THE SCOPE:—The fundamental objective of intelligence is the creation, protection and preservation of the elements of force and reduction of those of vulnerabilities. In this context, the term "intelligence" would include the whole field of acquisition, evaluation and protection of information relative to the situation with which politico-military authority must deal. To a varying degree, it may also include other activities, both overt and covert, relative to national security. Intelligence, however, normally does not have a primary concern with administrative information concerning one's own forces and resources. The information sought through intelligence concerns and covers hostile capabilities and intentions. It is much easier to find out about the capabilities than it is about intentions. The difference is between poker and chess. Obviously, of the two, intentions are of much greater importance, since from them flows the action. Intentions being so difficult to assess, the major role of diplomacy becomes simply to analyse intentions. Secret operations seek to reinforce the analysis of the diplomacy.

PECULIAR NATURE:—Because secret operations deal with relations between men, they are a subject, as complex as man himself. The most important single fact to be always borne in mind about them is that, every thing concerning them is relative. There are no absolutes. There are, however, certain basic principles which reflect centuries of experience in secret operations and which are, in turn, applications of historical human insights into the human nature. Precisely because secret operations involve the application of human insights into human nature, in constantly shifting and changing circumstances, these classical principles can never be observed to perfection. They are ideals which the professionals of the secret war for ever seek and never find. Compromises, improvisations and adaptations govern their decisions and actions. The

measure of their competence and skill is the degree of their perseverance and success in bringing compromises, inventions and adaptations to relative approximations of the classical principles.

THE PRIORITIES:—The matters that interest present day intelligence services are numerous and diverse, and so are the ways and means employed. However, as a condition precedent, they require an established order for collection and processing of information. Without guidance and direction, intelligence officers in different parts of the world would be prone to spending much of their time in duplicating each other and there will inevitably be serious gaps in information. Besides, officers without guidance would not be in a position to know for certain, whether the information that they are procuring has already been picked up somewhere else, or it is known from other sources, or is of low priority to be worth the effort or the expense. Therefore, the governments of all countries determine what intelligence objectives are and what information would be needed, without regard to obstacles. Further, the governments establish priorities among the objectives according to their relative urgency. For this specific purpose, the governments have under them what are known as **Intelligence Headquarters**. The HQs know the world picture and the requirements of their respective Government from day to day and from month to month. In preparing their directives for the intelligence missions, the Headquarters, first of all, consider the factors of political and physical geography and the presence of persons within the area who have or who can have access to the desired information. Usually the means of getting the information, once a task is assigned, are left to the ingenuity of the intelligence officers in the field. Sometimes, for diplomatic or other reasons, Intelligence Headquarters give out negative guidance i.e. instruction on what must not be done. However, it is always borne in mind that the best planning and the best guidance cannot foresee everything. Possibilities of the random and the unexpected, and often the inexplicable, are never ruled out.

TRANSMISSION HAZARDS:—One of the most, if not the most ticklish problems, in secret operations is how to transmit the information obtained back to Headquarters. This is particularly so when it is realised and recognised that, even the most significant secret intelligence in the hands of the agent, who cannot transmit into the sole place where it can be used, is of course valueless. Existence and security of transmission channels are, therefore, the first prerequisite of successful intelligence operations. Here of course is one of the salient characteristics of secret intelligence operations. **No matter how overt an operation may be, no matter how carefully devised and skilfully executed the cover the precise moment of greatest danger in such operations. . . the most vulnerable in the entire effort . . . is to transform the process from clandestine to covert and thus minimise to the utmost the clandestine risk.** In view of the fact that defence techniques are constantly devised, improved and revised in the light of fresh developments, this problem remains major and unending. Information gathered by the intelligence services or compiled by the analysts is of little use unless it is properly evaluated, ascertained of its reliability and got into the hands of policy makers. In the intelligence parlance, this is called **processing**. It is a service of vital importance. The processing of incoming intelligence generally falls into three categories. The first is the daily and hourly handling of current intelligence. The second is the research on all available intelligence on a series of subjects of interest. This is given the name of **basic intelligence**. The third is the preparation of intelligence available on a certain subject along with

in interpretation of the imponderables. In addition to the current raw intelligence reports and basic intelligence studies, there are the position papers, generally called "**national estimates**". These papers are prepared by the intelligence community on the basis of all the intelligence available on a certain subject. This is the entire way to deal with the mass of information about future developments so as to make it useful to the policy makers and planners.

TRANSFORMATION INTO POWER:—It is generally conceded that secret intelligence is essential and indispensable. It is also conceded that it is inseparable from political operations. However, experts on the subject have cautioned that, it is not and it must not be allowed to become an end in itself. The ultimate national aim in secret war is not simply to know. **It is to utilise the knowledge to maintain and to expand national power, and to contain and reduce the enemy's power . . . in other words to enhance the elements of force and reduce the elements of vulnerability. It is a dynamic and not a static process.** The transformation of intelligence and policy into power by means of actions takes place daily and visibly in strategic policy, economic policy, diplomacy, defence and propaganda . . . all the overt aspects of international relations. It also takes place daily, but invisibly, in the secret war in the form of covert political operations. The functional range of covert political operations is so vast as to defy listing. All these varied activities have a common political objective. It is the organisation, exploration and direction of existing human passions and purposes so that they contribute, no matter how indirectly, to the fortunes of one or the other side in the conflict. It is this substance of power, wherever and in whatever form it may exist, which the political agents, pursue, recognising that all organised social activity has a political content and significance.

OVERT INTELLIGENCE:—Foreign intelligence is collected in a variety of ways. Not all of them are either mysterious or secret. This is particularly true of **overt intelligence**, which is the information derived from newspapers, books, scholastic and technical publications, official reports of government proceedings, radio, television, etc. Even novels and plays some times contain useful information. Overt intelligence is also collected in the ordinary course of conducting official relations with foreign powers. Diplomatic negotiations generally call for a certain measure of secrecy. The information derived from diplomatic exchanges very often contain acts, slants and hints that can be very significant, especially when they are coupled with intelligence from other sources. Further, probes into great many new operations, such as communications analysis and new breakthroughs into scientific and technical devices can serve as extremely revealing of the enemy mind and might' and, therefore, helpful to the formulation of national policies vis-a-vis the same.

COVERT AND CLANDESTINE INTELLIGENCE:—As against overt intelligence, . . . intelligence which it is known or assumed that the other side knows too . . . there is the secret intelligence which it is thought or assumed that the other side does not possess. **This is covert and clandestine intelligence.** All intelligence operations are secret. Actually it is the meaning, purpose and modus operandi of this 'secret element' which decide some of the fundamental characteristics and techniques by which secrecy is established and maintained. However, despite this common factor, there are fundamental differences between 'overt and covert intelligence' and 'covert and clandestine intelligence'. In the first instance, all overt intelligence is there for the getting. However, in order

Jai Hind To

Our Gallant

Armed Forces

Makers of "JAI HIND" A Living Reality

▲
Phone :
3 5 4 4 7 9

●
Grams :
"JAIRUBBER"

**JAI HIND RUBBER PRODUCTS
PRIVATE LIMITED**

INSIDE V. G. MARKET, GRANT ROAD,
BOMBAY-7.

▼
Manufacturers of :—

INDUSTRIAL RUBBER & EBONITE GOODS

*With Our
Warmest
Greetings*

To,

OUR GALLANT ARMED FORCES
VICTORS IN THE HISTORIC AND
EPOCH - MAKING BATTLE FOR
BANGLA DESH

INTERNATIONAL PLASTIC CORPORATION

158, NAGDEVI STREET (1st FLOOR), BOMBAY-3.

Manufacturers of :—

- **POLYTHENE TUBINGS, SHEETS, ROLLS & BAGS.
TRANSPARENT AND COLOURED.**

PHONES :— OFFICE :— 328671 : WORKS :— 574503 : RESI :— 551663

GRAMS :— **UNIQUEMART**

to be really useful the effort for overt intelligence has to be broad and massive . . . missing nothing that can be readily available and can be of use even most remotely. In secret operations, the meaning of 'overt' is not only open and visible but it also signifies the person or activity . . . what he|it is or is stated to be. However, this is not the case with covert operations. Also basically and fundamentally secret though, yet their identity is hidden and masked throughout. There is also the added differentiation between covert and clandestine operations . . . both secret but in different ways. In clandestine operations, secrecy depends upon skill in utilising natural circumstances to hide the operations and render them invisible to the enemy. There is, however, no effort to disguise these operations. There is obviously a very large element of chance in clandestine operations. As against this, covert operations attempt to minimise precisely this very element of chance. Although skill is a vital element in the secrecy of all covert operations, yet their most important element, and their most distinguishing feature is the use of cover. All covert operations are visible, no effort is made to hide them from view. The major effort is to disguise these operations. They are not what they appear to be. In brief, the working distinction between the two forms of secrecy is that, clandestine operations are hidden but not disguised, covert operations are disguised but not hidden. Covert operations constitute the major part of secret war and 'cover' probably is the most important single element in all such secret operations. **Thus something overt can be secret, but anything covert or clandestine is or must be secret. However, everything secret is not necessarily covert or clandestine, and everything clandestine is decidedly not covert and vice-versa. Obviously, neither type of operations are easy. However, clandestine operations are less difficult than covert ones. By the same token, clandestine operations are considerably more risky than covert ones.**

All covert operations are generally more desirable for their lessening of the risk of discovery. However, all covert operations invariably have some moments, howsoever brief, when the cover does logically hold and when they necessarily become clandestine. The more important point is to recognise the moments with utmost clarity as being clandestine and hold them to an absolute minimum. It is because these moments are of greatest danger. It is for these moments that the enemy is generally watching. While both types of secret operations are used in war and peace, clandestine operations are more numerous in wartime and covert operations are the more common in peace time. The reason for this is that, the consequences of discovery are generally greater in conditions of peace than in those of war. States, therefore, have recourse in peace time to the greater security afforded by covert operations. However, this greater security does not lie only in the fact that they minimise the risk of detection of involvement of the State. They also benefit from a tacit agreement between themselves, the sum of long historical experience, whereby covert operations are recognised as a peace time avenue to actions which, when used, do not upset international appereances. The very reason for which States undertake covert operations reinforce this tacit agreement. This tacit agreement among governments, reached over thousands of years experience to let each other more or less off the hook, is based, however on the strict observance of another tradition. While clandestine operations must, by their very definition, be recognised as hostile, covert operation's potent hostility can only be ignored by the victim who uncovers it with the co-operation of the author of the act. Here is the origin and sanction, even sanctification, of the established custom of silence, or at the most, of flat disavowal by the responsible government when covert operations are uncovered.

THE ART OF COVER:—Open warfare depends upon weapons. As against this, secret war depends upon cover. Weapons are not in themselves the purpose of war. However, they shield the soldiers and enable them to advance to their objective or they protect them in retreat. Similarly, cover shields the agent from his opposition. It puts him into the position to accomplish his mission. Ideally, it should also protect the mission against at least, worst consequences of the agents being uncovered. Dealing, as it does, with human beings, their relations to each other, with what they feel and believe, with their habits and impressions, their insights and their actions . . . **cover is an art.** Cover can take a wide variety of forms. **Perfect cover**, however, is an ideal rarely achieved in practice. Necessity imposes something less than perfection. It, therefore, sometimes becomes necessary to resort to such dangerous devices as **notional** (false) identity. Notional identities obviously depend upon histrionic ability of the agent and his capacity to believe, think, eat, sleep and live his false identity. In the world, which we now live, notional identity also depends upon the forger. All great powers maintain special officers for the forgery of documents and seals of all kinds. Cover cannot always be created quickly in a desirable form. It is often necessary to resort to a process known as "**building the cover**". This is nothing more than engaging in actions which increase the plausibility of the cover. It must be taken into account that cover is not a **durable commodity**. By its very nature, some people have to be privy to the secret . . . to them cover is revealed, meaning disclosed under authorisation. Obviously, the more people who know, greater the danger of the cover being blown, meaning discovered or unauthorisedly disclosed. The fundamental rule in all cover arrangements is that, if cover is enlarged, the operations are suspended until cover can be rebuilt or new cover is developed.

ORGANISATIONAL COVER:—A lone agent, operating under a personal cover is certainly not extinct. However, he is fast becoming an anachronism. In a world of organisation men, the best cover for an agent is to be an organisation man. This melancholy development is known as **organisational cover**. At the very outset of developing organisational cover, a vital decision has to be taken. This is in regard to one or more responsible officers of the organisation itself. General practice is to try to sanction the arrangement wherever possible. Generally, the organisations may take a co-operative view of these activities. However, there may be some which, either because of the nature of their work, or their vulnerability to charges providing organisational cover, or simply because they do not agree with covert operations principles, may not sanction such arrangements.

COVER ORGANISATIONS:—Whatever the apparent similarity, cover organisations and organisational cover are not synonymous. Actually, in contrast to organisational cover, which uses legitimate agencies for cover purpose, cover organisations exist solely for the purpose of providing cover. They are an enabling and protective device, usually for large-scale operations. Their great advantage lies in the fact that once established, no further cover of the individual agents, who make use of the organisation, is necessary. In fact, a great many people who need not even know that they are functioning as agents, can be brought into the operations. The purpose is simple . . . to set into motion, under ostensibly independent suspicious activities for which the government does not wish to avow responsibility. It is not, therefore, the activities themselves, but only the link between them and the government which are covered. Apart and aside of the fact that cover organisations are an expensive

matter, they are, for the most part, suited only to **political or para-military operations and not to espionage**. Consequently, they are reserved for activities which are direct expressions of a government's foreign policy.

FRONT ORGANISATIONS:—Yet another classification of cover, are the front organisations. The differences between cover and front organisations have all along been the subject of some argument among professionals. Cover experts agree that differences exists, but they are often blurred in practice. Briefly, however, a front organisation goes a step or two beyond a cover organisation in complexity. Whereas a cover organisation exists to mask the government involvement in an activity, a front organisation hides, not only the government, but also the true purposes of that involvement. Perhaps, the most important difference between cover and front organisation is that, in the former, most responsible personnel are aware of the nature of the organisation . . . of the link with the government that is hidden . . . while in the latter, there are generally relatively few leading personnel who know their link with the government, which is hidden . . . while in the latter, there are generally relatively few leading personnel who know their link with the government, which is hidden frequently by a personnel cover, and their mission is carried out behind the front of the organisation's ordinary functions and behind the front provided by the unwilling personnel.

THE FOREIGN ELEMENT:—It may sound superfluous, even banal, to point out that the information sought in secret intelligence operations is originally in the possession of foreign nationals. In brief, the sources of secret intelligence are, by definition, foreign. However, this pedestrian, but fundamental fact, has important consequences for the conduct of such operations. Foremost amongst these is the constant necessity to gain and to hold the co-operation of foreign nationals who have the essential access to the desired information even if such a foreign source is hostile. The vital question, whether a foreign source is willing, whether he knows and understands what he is doing, is the one on which a clear and precise decision has to be taken at the very outset of such an operation. It is here that the most accurate assessment of the foreigner's motives, capabilities and general emotional and intellectual posture has to be brought into play. For instance, a man thoroughly disaffected with the regime under which he lives may regard services to a foreign intelligence services as fulfilling a higher duty to his own nation. If such a feeling is genuine, his knowledge of what he is doing it for may be an essential part of his co-operation, even if it does constitute an added risk to the security of the operation and the secrecy of the information he provides.

THE ELEMENT OF FALSITY:—Intelligence services cannot be and generally are not limited to disaffection for their sources. It is generally considered desirable, and sometimes necessary, that foreign sources do not understand clearly what they are doing and for whom. The most desirable such situation is one in which the sources do not know that they are, in fact, providing the characteristics of all secret intelligence operations. An even more variant is the situation, in which the sources know for what they are working, but are necessarily and deliberately misled as to their true purpose. From this frequent necessity to disguise motive, purpose and even identity, flows one of the major and identifying characteristic of secret operations . . . **the existence of actual or potential element of falsity, marked superficially by duplicity and deceit in the basic case of officer-agent relationship.**

ESPIONAGE:—Opposing countries always try to stop the effort to intelligence by others. Thus, much of intelligence is carried out in secret and sometimes it is spoken of as a **clandestine collection**. However, the traditional word for it is 'espionage' which, in essence is access . . . some cover, some device must get close enough to a thing, place or person to observe or discover the desired facts without arousing the attention of those who protect them. At its simplest, espionage is nothing more than a kind of "well concealed reconnaissance". This is generally sufficient when the target is fairly large, easily discernible and requires only a brief look around. Hazards, however, are that continuous reporting becomes difficult to maintain when the agent's presence in the area is secret and illegal.

PENETRATION:—Of far more long term value than mere reconnaissance is penetration, by which is meant that somehow or the other an agent is able to get inside the target and stay there, in such a position and a role that information comes to him with a minimum risk and as a natural by-product of his position. This is also one of the most difficult problems and necessitates skill, judgement, ingenuity of the highest order and a keen understanding of the other people. Even ordinarily, the process of direct penetration is a difficult technique, risky, unproductive and time-consuming technique. Security measures being what they are in our times, direct penetration poses further grave problems and extreme difficulties. Under the circumstances, therefore, a favourable . . . one can say a popular . . . technique is that of **indirect penetration or subversion**. The advantage of subversion is that it avoids complications of the choice of agent and the preparations and delays, which are an essential and integral part of direct penetration. However, the problem is not that of tailoring the agent to the task. It is that of tailoring the method of recruitment . . . of character, disposition and motives of a selected potential agent. Another alternative to direct penetration is to have someone else in more advantageous position to do this work. In secret intelligence operations, this means, as a practical matter, working relationship with other Intelligence Services, particularly those of the smaller powers, whose intelligence services, by the simple fact of nationality differences, and because of lesser prominence as leaders in the secret war, do not suffer from the disadvantages of the great powers. The result is a constant and a vigorous competition among all the great powers for strictly exclusive working relationship with the services of lesser powers. These relations most often result in the control of lesser services which the lesser powers would not generally like.

With Compliments From

GOLD SOAP CO.

27, Dr. MAHESHWARI ROAD, BOMBAY-9.

Phone :- Office — 333159 — Factory :- 571134

Manufacturers of :-

"GOLSCO" WASHING SOAP
PERFECT AND ECONOMICAL
ESSENTIAL FOR EVERY HOUSEHOLD

USE OF MACHINES:—Through the long centuries gone by, human beings were the sole sources of **heutistic power**. However, in recent years, machines have been pressed into service for securing and assembling the data of intelligence. Already, there has been an explosive growth of the type and number of such machines, and further additions are enlarging the list every dawn and dusk. They have already been pressed into service to observe and record events, to replace, in a sense, human hand and human eye, to take over in areas which human capabilities cannot reach. They are already operating from the earth, from the high seas and from several hundred miles altitudes in the sky. There has already been fantastic growth of intelligence satellites. To a very large extent, it may be claimed, science and machines have already emerged as a vital element of intelligence gathering. Intelligence experts have also conceded that machines have improved the nature and volume of information in as much as the machines have shown the capabilities of recovering quickly and accurately from the enormous storehouse of accumulated information, such past data, as may be necessary for, evaluation of the current information. What before the advent of machines, could take an army of analysts, weeks and even months of search and study among the files, the machines have been able to accomplish within a matter of minutes. Intelligence experts have also conceded that machines have improved the nature and volume of information, feel that in the very foreseeable future, machines will take over the entire range of intelligence activity and it will be virtually impossible to keep anything hidden from them except by the use of cover and counter intelligence machines.

Bharat Dynamics Limited

IS YET ANOTHER VENTURE

BY THE GOVERNMENT OF INDIA

IN

THE PRODUCTION OF DEFENCE EQUIPMENT

Established in

1970

AT HYDERABAD (ANDHRA PRADESH)



BHARAT DYNAMICS LIMITED

IS CURRENTLY ENGAGED IN THE

MANUFACTURE OF "MISSILES"

FOR INDIAN ARMED FORCES

*With
Best Compliments
From*

●

**GREAVES
COTTON &
COMPANY
LIMITED**

AVIATION AND ELECTRONICS DIVISION

2, PALACE ROAD,
BANGALORE-1B.

TELEPHONES :—

23873 — 26773

TELEX :—

043 — 365

COUNTER INTELLIGENCE:

OPERATIONS which have the aim of making the opponents acquisition of intelligence as difficult as possible, by taking necessary security measures belong to the field of counter espionage, and the information that is derived from them is called counter intelligence. Counter intelligence is also a form of secret intelligence operation. However, it is a form so esoteric, so complex and so important that it stands by itself. Despite its vital importance and extensive use, the term counter intelligence is a widely misunderstood branch of secret operations. It is the word 'counter' which has caused the trouble. It is generally interpreted to mean 'against' . . . defensive operations against the enemy's intelligence operations. Actually, it is just the contrary. In actual practice, counter intelligence is an offensive operation . . . a means of obtaining intelligence about the opposition by using, or more usually, attempting to use the opposition's operation apparatus.

THE CABOTS:—Counter intelligence spread of knowledge extends to relations with all other services. Counter intelligence men do not conduct their relations with other services, generally speaking. However, they have to be fully informed about the extent and substance of them. This uniqueness of counter intelligence interest and activity can sometimes be a bit jolting. It generally happens that men who specialise in counter intelligence affairs regard themselves somewhat as the **cabots of intelligence world, speaking only to God**. Counter intelligence practitioners do in fact believe that their profession is the Queen of all secret operations. Their views are based on the undeniable fact that, for the mere conduct of their daily work, they must necessarily know more than anyone else, not only about enemy operations, but also the operations of their own Service. It is this greater and broader knowledge which leads counter-intelligence specialists to the belief that they can and they do control all other secret operations.

CLASSICAL AIMS:—The classical aims of all counter intelligence operations are to locate, identify and neutralise the opposition. The means for this purpose generally are neutralisation which can take a vast variety of forms. **Surveillance**, which is the professional word for **shadowing or tailing**, and which, like every act of counter espionage, is executed with maximum care, in order that the target does not become aware of it, and interception, which like most branches of intelligence work, has many technical resources. However, the ultimate goal of all counter intelligence operations is to penetrate the opposition's own secret operations apparatus, to become, obviously without the opponent's knowledge, an integral and functioning part of his calculations and operations.

THE VITAL DIFFERENCE:—Counter intelligence operations differ from all other general secret intelligence operations, in as much as they have a single specialised target. The superior interest of this target, the opposition's secret operations, over most others in intelligence is marked. A successful penetration of an opponent's secret operational organization confers the distinct and definite advantage of being at the very heart of his actions and intentions. It enables it to share his mind and thinking to an intimate and reliable

degree, impossible in any other form of secret operations. By knowing as much as the enemy knows, value to the enemy of his secret knowing can be annulled at one stroke by **neutralising** the value to him of his secret intelligence. More importantly, the knowledge of enemy intelligence interest and of his political operations, as revealed in his policy papers and instructions, most reliable possible indications of his intentions become available. In consequence, it becomes entirely possible to control enemy actions by tailoring intelligence for him to one's own purposes, by influencing his evaluation, and misleading him as to his decision's consequent action. It must, however, be borne in mind that this is only an ideal. In actual practice, counter intelligence moves along, for the most part, at a level of compromise much below such total success. The kind of total success, which is the ideal of counter intelligence, is ruled out by the facts of human conflict.

COUNTER INTELLIGENCE v/s SECURITY:—It must be understood that there is an essential and a fundamental difference between **counter intelligence and security operations**. The former are offensive operations which depend for the very existence and success on the constant, if controlled, contact with the enemy, while the latter are defensive operations, which seek to destroy enemy's operations and cut off all contact with him as dangerous. Here indeed lies another of the classic conflicts of secret operations. With the discovery of an opposition network, security will pause only long enough to seek to uncover the members of the network and then call for obliteration. Counter intelligence, on the other hand, will insist upon exploring the possibility of ex-

With The Compliments of

AUTOMOBILE & ENGINEERING WORKS

59, FORBES STREET,

BOMBAY-I

Manufacturers of :—

DIESEL ENGINES, SPARES &

SHEET METAL COMPONENTS

plotting the network . . . as the phrase has it . . . **"playing back to the enemy"**. As with the conflict between political and intelligence objectives and techniques, there is no master solution between counter intelligence and security. Each case has to be handled on its merits. Since there is no impartial authority which can decide these causes in the event of a disagreement, and there is often no time for such bureaucratic procedure, it is often found that counter intelligence and security are, in practice, working at cross purposes, even though in the same field and on the same initial basis of much of the same information.

COUNTER INTELLIGENCE v/s COUNTER ESPIONAGE:—Counter Intelligence is generally used as a synonym for **counter espionage**. In the opinion of the experts, despite the sanction given to it by some Armed Forces Counter Intelligence Corps, the term is a misnomer. It suggests in its strictest sense an impossible kind of exchange of volleys in which the lethal bullets are bits of evaluated information. There is nevertheless, a secret operation which could conceivably be described as counter intelligence, although it is not. **This is the deliberate planting of information with the enemy or the undertaking of an act or series of acts which will create a desired impression upon him.** When the purpose of such an operation is to test the opposition's reaction to its given piece of information, whether true or false, it is **simple intelligence operation**. It is the intelligence equivalent of a **military probe or of a political trial-balloon**. When the same operation destination is undertaken with the purpose of tracing the course of an ultimate destination of the planted information, it is a **counter intelligence operation**. It provides the vital information about who is in touch with whom and who knows what. When the purpose, of planting information, or the taking of actions is to create desired impression, is to influence the enemy's decision and actions, **they become one of the secret operations' most vital and complex activities . . . "deception"**.

PENETRATION:—It is conceded that penetration is the technique par-excellence of all counter intelligence operations. However, this technique is extremely complex. Much of its complexity arises from the fact that effective and successful penetration is not limited to the single possibility of introducing ones own agent into the enemy operations. The same effect can be achieved in many substitute ways . . . and most often . . . if for no other reason than the imposing difficulties and the length of time, which are the usual prospects of planting an agent in another service. The commonest substitute for planting ones own agent is the **'turning of an enemy agent', "turning an agent", that is to say, convincing a man working in another cause, that he should change sides and continue active in the conflict.** With all the added risks involved, it is clearly a **psychological operation**. It has the inherent weakness that, what can be done once may, perhaps, be done twice, thrice or even more, thus leading to the creation of multiple agent. This type of multiple agent is generally a lone operator working for his own profit, and the question of turning is not important with him. The decisive question in this regard is which turns are genuine and which are false. This alone is one of the problems, which makes counter intelligence in this context an extraordinarily complex affair. The determination of which turns are genuine and which false, is a painstaking exercise in the control of information of who knows what. It requires constant alertness and simultaneous grasp of, both large perspective and details. It is obviously an intellectual exercise of almost mathematical complexity. It is, perhaps,

understandable that the ideal of all counter intelligence operations is a form of penetration in which the intervening factor of an agent is removed. **This occurs when an enemy network is captured intact and in its entirety.** Such cases, are rare, and are most often the result of a lucky accident. However, this does not and should not stop counter intelligence men from forever trying to achieve.

DECEPTION:—Deception, like counter intelligence, is concerned with intimate, controlled and purposeful contact with the enemy. However, its objective is more specific than counter intelligence. It is a broader type of operation, being aimed at the total range of elements which make up the opposition's thinking and decisions, rather than only his intelligence organisation. It, therefore, frequently happens that the ultimate stage of a counter intelligence operation, the ability to mislead the enemy is subordinated to the requirements of a deception operation. In such a case, the counter intelligence operation becomes known as a **"deception channel"**. In intelligence parlance, the term deception covers a wide variety of manoeuvres by which one State attempts to mislead another State, . . . generally a potential or actual enemy, as to its own capabilities and intentions. The technique of deception is as old as history. Its best known uses are in wartime, or just prior to the outbreak of war, when it takes the form of **strategic deception**, and its purpose is to draw the enemy defences away from planned point of attack or to give the impression that there will be no attack at all, or simply to confuse the opponent about one's plans and purpose. Deception in this context, because of its immediate relevance to action, is probably the ultimate secret operation. Even if this evaluation is not universally accepted by the professionals of secret war, there is no doubt that strategic deception, whether in peace or war, is the most secret of all operations.

Kirloskar EQUIPMENT

To keep alive vital communication links

- Mobile Diesel Alternator Sets
- Automatic Mains Failure Diesel Generator Sets
- No Break Diesel Generator Sets
- Battery Charging Sets • Voltage Regulators



To aid defence production

- Light Weight Welding Sets
- A C Motors • D C Motors

At all times, in peace or when danger threatens, we have a commitment to the Nation.



Manufacturers
KIRLOSKAR ELECTRIC CO. LTD.,
 P.O. BOX NO. 317, BANGALORE-3, — P.O. BOX NO. 112, HUBLI-20, INDIA.
Sole Distributors PARRY & CO. LTD.
 P.O. Box No. 12, Madras 1
 P.O. Box No. 506, Bombay 1 BR
 P.O. Box No. 208, Calcutta 1
 P.O. Box No. 172, New Delhi 1

ASP/KEC/141A

SOVIET INTELLIGENCE SET-UP

ABOUT the middle of ninth century A.D., the Russians concentrated in the trading community of Navgorot, it is said, sent a message to a Chief of the Vrangians called Rurik, saying: 'Our land is great and beautiful, but there is no order in it. Come and rule over us'. Whether legend or not, a Rurik did found a dynasty which welded the numerous principalities over the course of next 500 years into a single nation under the aegis of Moscow. The period was followed by a Tartar invasion under Batu Khan. The Tartar continued until expelled by Ivan the Great, in 1492. The grandson of Ivan the Great, was Ivan the Terrible, a contemporary of British Queen Elizabeth I. Ivan owed his soubriquet, the 'terrible', to his ruthlessness and cruelty, though he was, in fact, a very able ruler. Because of his opposition to the privileged classes, he was in constant danger of assassination.¹ In order to protect himself he formed a Praetorian Guard, called the Oprichinks. This was followed by the setting of Cikhana, the only other secret organisation prior to revolution in 1917.

POST REVOLUTION PERIOD:—The men who took over the ordering and conduct of affairs in 1917, had long experience of the particular measures of Secret police as their number one adversary. They were aware of the shortcomings of Okhrana, and were equally alive to the necessity of having protection for themselves. In their clandestine activities too, they had practical experience of espionage work. The period, immediately following the revolution was not free from the hampering activities of Okhrana. It is indeed remarkable that barely after two months after Lenin had the reins and six weeks after his party had seized power, the status of the Security Sub-Committee was raised to the extraordinary Commission for the struggle against counter revolution and sabotage and thus was born Cheka. The functions required of the Cheka were twofold: to organise a political police force to keep in check the activities of all counter-revolutionaries and to organise an intelligence service to counteract the activities of White Army spies and secret agents of foreign countries. However, whatever its merits for internal consolidation of the new regime, it was not considered adequate for a world revolution which was the ultimate aim of the Communist revolutionaries in Russia. The next step in the direction, therefore, was the formation of **Communist International or Comintern**. This came into existence in 1919. As a rallying point it was a flop. However, as an organisation for laying the foundation of espionage abroad it had greater success, though not particularly remarkable. The struggle with the White Russian Forces came to an end in early 1922 and on 11th February, that year Cheka was renamed, the **State Political Administration**, the GPU, an organisation which in its time, was to be feared infinitely more than Okhrana or Cheka had ever been.

For the next two years the GPU felt its way in co-operation with the Comintern. By 1924, coinciding with the opening of diplomatic relations with Great Britain, it had established its network and refined its organisation. This development was marked with yet another change in its name. It thereafter became **OGPU** and operated as such for ten years. It was then dissolved. Its

place was taken over by the **People's Commissariat for Internal Affairs . . . NKVD**. This arrangement continued until five months before the **German-Russian War** broke out and the department was raised to a **Commissariat for State Security . . . NKGB**. This was again short lived. Exactly a month after Hitler's invasion of Russian territory, it was demoted and became a **Department of NKVD once again**. For eighteen months, it functioned as such when in April, 1943, it was once more elevated to a **Commissariat** and its title was changed from **NKGB to MGB**. After the fall of Beria, the MGB was again united to the Ministry of Internal Affairs. **This lasted for a year**. In March 1954, it became a separate Unit again under yet another new title, the **Committee of State Security KGB** and has functioned as such since then.

ORGANISATION AND ADMINISTRATION:—The organisation of the KGB has been built up over the years, as the scope of activities increased and the experience made clear what was necessary for the carrying out of policy laid down from time to time and the steps necessary for the achievement of ends demanded. At various times, there have been changes. However, these changes have had little effect on the overall functioning of the organisation, except perhaps in operational efficiency.

As at present, the Headquarters of the Soviet Secret Service, colloquially known as the **CENTRE**, is divided into two Directorates. Each is led by a Director who has Deputy Ministerial rank. The first Directorate, is roughly analogous with the Intelligence agencies in other countries. The Second Directorate is indigenous only to Soviet Russia. Though the First Directorate has the sub-title of counter-espionage, its functions are to employ agents abroad to collect strategic and general intelligence, and to co-ordinate the activities of and assess the results achieved by the much smaller and more specialised intelligence agencies of the Ministry of Foreign Affairs or External Trade, among other activities. The first Directorate is sub-divided into seven main divisions.

(1) **Foreign Division** :—Its functions make it the most important. It controls all secret agents, sets the tasks and assembles the results returned by the networks. In addition, it directs intelligence research and disseminates the information collected. (2) **The Operational Division** :—Under the guidance of the **Foreign Division**, it directs, as its name implies, the actual operations of the agents, controls the networks, selects the agents to be sent abroad or advises about the recruitment or otherwise of potential agent material which its recruiting officers abroad submit to it. It maintains special agents in every Russian Embassy or other official missions or delegations abroad. It maintains contact between the networks, where this is necessary and it organises communications. (3) **The Communication Division** :—It is responsible for the practical maintenance of communications. In addition, if an agent is compromised and must make a rapid departure from the scene, or if he escapes after arrest, this division organises the escape routes. (4) **The Secret Division** :—It is in fact the documentation service. Its function is to supply every kind of forged document agent is likely to need including, codes, microdot apparatus and radio links. (5) **The Information Division** :—It does exactly what its name suggests. It collects every scrap of information on the social, cultural, economic and political, that it can lay hands on in every country in which operates. (6) **Index Section** :—This is the most interesting section of this Division. It is probably unique, at all events in so far as details, which can be of use even remotely, are concerned. (7) **Recruitment Division** : Its task is to recruit agents. However, it is considered to be the least important.

The Second Directorate is peculiar in Soviet Union only. Nothing comparable to it exists in any other country, not even in the Soviet alliance countries. It is sub-divided into four major divisions, i.e.

(1) **The Propaganda Division** :—It possesses functions which its innocuous name tends to conceal. Its main aim is to weaken, disrupt and eventually destroy the forces of law and order in the non-Communist countries and thereby pave the way for Communist Governments. To this end, it maintains contact with national Communist Parties, and is particularly active where these parties are suppressed. It employs its own agents whose main tasks are together political intelligence and to create subversive groups which come into action when necessary, and while waiting for work quietly but ceaselessly, undermine the existing order (2) **The Individual Division** :—It is the alter ego of that section of **Internal Security** which keeps a check on the reliability of citizens at home. This division keeps a similar check on the reliability of all Soviet citizens working abroad. Every diplomatic, consular mission, every delegation or party travelling outside the Soviet Union, have the agents of this division attached. Agents of this division also surveille agents working for any other divisions and sections of Soviet Espionage. (3) **The Alliance Division** :—It came into existence in the post year expansion of Communism to other countries. It went into action on the heels of the Russian liberating armies. (4) **The Special Division** :—This is one of the oldest departments of Soviet espionage. Its function is to liquidate the enemies of the Revolution by violence and murder in such obstinate cases where other forms of persuasion are not effective.

WE SALUTE OUR

**GALLANT ARMED FORCES
AND**

PLEDGE OUR VERY BEST

**FOR FURTHER STRENGTHENING OF
OUR NATIONAL DEFENCE BASE**



KEWAL RAJ & CO. PVT. LTD.

315, GIRGAUM ROAD, BOMBAY-2 (Phone : 315165)

Manufacturers of :-

**OZETTE BRAND ■ HAIR BRUSHES ■ SHAVING
BRUSHES AND**

**"K. R. BRAND" ■ PAINT BRUSHES ■ INDUSTRIAL
BRUSHES AND ■ DOMESTIC BRUSHES**

make the scene with

TEIJIN

Tetoron POLYESTER FIBRE AND FILAMENT YARN FROM JAPAN
Create a world of fashion fantasy. Turn on with fabrics
made from Teijin Tetoron. The polyester fibre and
filament yarn that make lovable blends happen.

SOLE AGENT IN INDIA

J. M. TRADING CORPORATION

51, DADU SETH AGYARI LANE, BOMBAY-2. Phone: 299317, 317387, 324888



CHAPTER VI

GUERRILLA WARFARE

CONCEPT, THEORY, PRACTICE, MEANS AND OBJECTIVES.

GUERRILLA warfare has survived the onslaughts of times; it has come to stay, it has grown to occupy its pride of place in military systems and techniques of warfare . . . the Four Dimensional War. In the post war years alone, guerrilla warfare has been the most deeply studied subject. Within this short period, as many as twenty five countries have been committed to guerrilla warfare and the guerrillas have scored the most notable victories in all, particularly in China, French Indo-China, Cyprus and Cuba. Almost half of the world's population has been involved in this form of struggle and it is today the most serious concern of all peoples in all countries.

Military theoreticians are now agreed that guerrilla warfare is an extremely complicated phenomenon . . . a life and death struggle by the people, of the people, and for the people. Far from being incidental, it is most sophisticated and has to be preceded by years of preparations. Fundamentally an internal conflict and a protracted struggle, guerrilla warfare has been credited with three grand objectives . . . self preservation and expansion; winning the popular support and the destruction of the existing order which in the eyes of the guerrillas is invariably rotten, reactionary and wholly unacceptable to the masses of the people. Cause, organisation, propaganda and, to some extent, terror are the means used to win over the people. Espionage, sabotage, terrorism, fronts, secret as well as open organisations, mass struggles and finally military campaigns are employed to defeat the enemy. Bases, weapons, supplies and personnel are used for self maintenance and expansion. With capable and dynamic leadership to command and co-ordinate the entire struggle, the guerrillas become the most persistent and most formidable battle contenders. Whatever the duration of the struggle, whatever its hazards, the guerrillas never have any doubt about their ultimate victory. Harbingers of revolutions, they always hold the future as 'theirs' and of their making.

WE'VE SET OUR SIGHTS ON CONFIDENCE

**We have seen
troubled times.
But we have
overcome them.
Because we were
united in the
common cause.
Because we had
faith. But above
all, because we had
confidence in our
leaders and in our
armed forces.**

**In the times ahead,
we shall continue
to be confident.
And we shall
continue to forge
ahead!**

PARAGON



is the confidence fabric



HISTORICAL SETTINGS:—Till recently, military theoreticians were mostly concentrated on the theory and practice, tactics and strategy and weapons systems of **positional war or war of movement**. As a result of this, the thrilling stories of thousands of campaigns waged by men and women, not organised on strict military lines though, yet standing upto regular armies by operating from inaccessible mountain, swamps or forest lands and compensating for the lack of numbers, military skill and other resources by superior morale, mobility, surprise capability and the intimate knowledge of the countryside, had passed into the legends of the countries concerned. However, when military minds turned to the study and interpretation of guerrilla warfare, immediate impression on the minds of the students of modern warfare was that guerrilla warfare was something very new. It is only now, when some of the old legendary campaigns have been pulled out of their obscurity and re-woven into versions of facts and figures, reason and logic and practical and positive doctrine, that the real truth has dawned upon the students of modern warfare . . . **truth that guerrilla warfare in fact is older than the concept of positional warfare or war of movement . . . that throughout the period of history guerrilla warfare has remained an essential and indispensable adjunct and alternative to regular warfare, particularly in militarily weak, invaded, overrun and occupied countries. Actually, guerrilla forces alone have provided the base for the growth and development of regular forces and committed them to wars of liberation.**

According to the latest researches, the first recorded guerrilla war in history occurred in China about 3,600 B.C. when **Emperor Huang of the Han Dynasty** engaged in a long war with the **Miao Dynasty** under the leadership **Tsi Yao**. Emperor Huang used guerrilla warfare to defeat the tactics of his enemy. Throughout China's subsequent history. Guerrilla warfare also remained a favourite instrument with all those Indians who refused to accept the foreign domination and continued to fight for their freedom. The same was true in Europe and North America. For instance, Caesar encountered the irregulars in Gaul and Germany. American colonists engaged in continuous unconventional wars with the Indians. In its early crude form, guerrilla warfare rose spontaneously with the limited aim of eliminating the local oppressive authorities only. However, on several occasions, it assumed national proportions and saw action against foreign occupying forces or national tyrannical rulers.

Historically the word '**Guerrilla**' in its modern concept originated in Spain during the **Peninsular War of 1808-14** when the Spanish irregulars and civilians harrassed Napoleon's troops who were trying to gain control of the country and to expel the English from the **Liberian Peninsula**. Literally, '**guerrilla**' at that time meant **small war** and the man who participated in such a war was called '**Guerrillero**'. However, he also called himself **Partido or Partisan**. Thus, Guerrilla and partisan eventually became interchangeable words. Later still, these fighters took on to more honourable names. For instance, during **World War II**, the Russian irregulars called themselves '**partisans or fighters for freedom**.' The same was the case with irregulars in China under **Mao Tse Tung**. The position of the irregulars fighting against **NAZI** occupation forces during **World War II** was also the same. They considered themselves **patriots par excellence . . . crusaders in the national cause**. In the post war years, when the guerrilla technique became the most favourite form of warfare with the peo-

ple still under imperialist heels or suffering capitalist exploitation, guerrillas came to occupy their rightful pride of place in the military systems of the world.

Another illustration of these tactics was found in the procedures of T. E. Lawrence (of Arabia) who led the Arabs against the Turkish occupation army during World War I. Lawrence is regarded as the first modern theorist on partisan warfare. It was Lawrence who initiated the 'Gas Concept', that guerrillas must be an idea, a thing invulnerable, intangible, without front or back, drifting about like a gas. Throughout his writings, Lawrence stressed that guerrillas had to harass, confuse, exhaust, isolate and discredit the enemy, not destroy him. Like a gradually consuming fire, the partisans should burn out the resources of the enemy who must then withdraw. Tactically, Lawrence advocated 'tip and run, not pushes and strokes' and the use of smallest force in the quickest time at the farthest place'.

CURRENT IMPORTANCE:—Commenting upon the current importance of guerrilla warfare, Michael-Elliot Bateman of UK has observed: "In the post-war years we have been witnessing a clash between two military systems that are opposite in their philosophies and culture, in their design and function, in their means of leadership and discipline and in their methods of handling the basic raw material of war . . . the man. This may prove to be . . . an important point in history, the twilight of one military system based on tradition and the dawn of a new one that represents a higher order in military development. We have certainly been witnessing two entirely different forms of warfare that operate on different planes . . . the three dimensional conventional war adapted to counter-insurgency usage and the four dimensional People's War."

The above is the supreme recognition of the current importance of guerrilla warfare. However, even otherwise, military commentators have since conceded most ungrudgingly that, guerrilla warfare has, not only survived into the era of massed armies, tanks, aeroplanes, rockets and missiles but it has reached its highest development and has, as such, become as much, perhaps more, a part of modern war as armoured divisions, air or even nuclear forces. Baffling and annoying as it may seem to a growing number of established Governments, the more disdained than respected by straitlaced military professionals, the wily guerrilla has finally crashed his way into respectable military society. No longer is he snubbed as an unconstitutional underloper. Actually, he has become a formidable battle contender. Guerrilla has now come to mean overcoming material superiority, not by employing more perfect material, but by the use of superior intelligence and strategem. There are many who even think that guerrilla warfare has become important so as to make a war of movement of the conventional type less effective and a nuclear general war almost an impossibility. Whatever the form a future war may take, secret warfare will never be abolished from the motives of principles . . . it will in fact retain and increase its importance. It will, perhaps, emerge as the only technique of warfare, in the coming future. Under the circumstances, therefore, no General Staff will, in the coming future, would be in a position to ignore it.

THE CONCEPT:—Guerrilla warfare has been defined as an element of a concrete revolutionary warfare strategy . . . that is, of a plan of co-ordinated behaviour intended to bring a revolutionary association to power in a given social system. A guerrilla (revolutionary) war is primarily an internal conflict,

though external influences seldom fail to have bearing upon it. The conflict generally results from acts of the insurgents aiming to seize power from external aggressors or local tyrannical regimes or to split and set up what has since come to be known as **"People's Revolutionary Regimes"**. Commenting upon this characteristic, Lin Piao of China has observed, **"Revolution or People's war in any country is the business of the masses in that country and should be carried out primarily by their own efforts . . . there is no other way. . . . If one does not operate by one's own efforts, does not independently ponder and solve the problems of the revolution in one's own country and does not rely on the strength of the masses, but leans wholly on foreign aid even though this aid is from socialised countries which persist in revolution, no victory can be won or can be consolidated even if it is won"**.

Guerrilla (revolutionary) war is essentially a protracted struggle. According to the commentators on positional warfare, this characteristic is imposed upon it, not by design but by the inherent combat weakness of the insurgents themselves. However, authors and architects of Guerrilla technique do not accept this contention. According to them, the capability to hold on and fight for longer duration with ever growing vigour and vitality is the most essential source of strength. Longer the duration of the struggle, greater are the chances of ultimate victory. Commenting upon this characteristic, Mao Tse Tung of China has laid down, **"The rash advocates of quick victory cannot endure the arduous course of the protracted war. They would want a quick victory and whenever conditions turn slightly for the better, they would clamour for a strategic war of decision. If their wish were carried out, the entire resistance would be jeopardised, thus sacrificing our protracted war and falling into the vicious trap of the enemy"**. Though frequently confused with, there are fundamental differences between the concept of guerrilla warfare and that of **revolution, plot or civil war**. A revolution usually is an explosive upheaval, sudden, brief, spontaneous and unplanned. In a revolution masses move first and then the leaders appear. A plot is the clandestine action of an insurgent group directed at the overthrow of the top leadership in its country. Because, of its clandestine nature, a plot cannot and does not involve preparation by the masses. Preparation for a plot may be long, the action itself is brief and sudden. A plot is always a gamble. A civil war suddenly splits a nation into two or more groups. After a brief period of combat and confusion, each group finds itself in control of a part of the territory and existing armed forces which they generally commit to war of movement and to develop their respective strength during the process of combat. The war between these groups soon resembles an ordinary international war, except that the opponents are fellow citizens.

With the Compliments of :

PHONE::

3 5 8 6 8 9

3 8 1 4 4 7

3 8 3 0 3 4

TELEX

011-3551

GRAMS:

IRON ALLOY.

BOMBAY METAL AND STEEL SYNDICATE

239, Sardar V.P. Road, (Near Alankar Cinema.)
Bombay-4.

Specialists in Tool & Alloy Steel.

Importers and Stockists of

"BHOLER" Tool & Alloy Steels

TYPES AND OBJECTIVES : Guerrilla warfare is of two major types. One is the war of liberation waged by bands of civilian population against a foreign invader. The other is the armed struggle of an outraged segment of national population against their own government condemned by them as usurper, tyrannical, dictatorial, a tool of indigenous vested interests and foreign imperialist elements and, therefore, wholly unacceptable to the free and freedom loving masses. Whatever the type, guerrilla warfare is fought to progress in such a way that two major aims are fully realised. First, the guerrillas have to avoid being pursued, encircled, assaulted and eliminated by the enemy. In order to achieve this, the guerrillas have to avoid frontal fighting, open fighting or any other type of fighting in which the enemy, employing his regular armies may happen to be in an advantageous combat position. Secondly, guerrilla units, to achieve their ultimate objectives, have to develop from weak into strong units, capable of ultimately taking the field against the enemy, piece by piece, and 'seize his equipment. In essence, the guerrillas during the process of their operations have to erode and eat up the enemy strength while adding to their own by seizing the enemy equipment and arming larger and larger number of people under their own command. Thus, the guerrillas have to be practitioners *par-excellence* in the economy of force.

NOT DECISIVE:—Authors and architects of guerrilla technique of warfare have themselves conceded that whatever its gainful uses in the concept and conduct of modern war, generally guerrilla warfare cannot be decisive and achieve victory. According to them, guerrilla strategy can at best serve to engage the enemy as much as possible, to tire him out, to squeeze blood and to make him jittery . . . it can tie up and paralyse an enemy ten times larger than its own strength, weaken and exhaust him by draining his resources and draining his fighting potential. However, it will, throughout the period, remain strategically defensive. Final victory will always rest with the regular army capable of taking the field and waging war of decision through strategic offensive. It is for this reason alone that guerrilla forces are generally used to assist a regular army. It is for this reason alone that guerrilla forces pre-suppose the existence of a regular army, national or allied, to whose ultimate objective, they must operate.

FUNDAMENTAL ELEMENTS :—As in the case of regular and positional warfare, so also in the case of guerrilla warfare, there are certain fundamental feeder and sustaining elements. Unless these elements are present in the requisite quantum and are fully operative, guerrilla warfare cannot hope to succeed. Authors and architects of guerrilla warfare campaigns cannot hope to succeed unless they take these elements into full account in their planning, preparations and actual operations. These elements are :—

Political Elements:—A guerrilla war to be successful has to rely most closely upon the people and has to be nourished by them. In order to accomplish this, the people must be imbued with a certain set of political ideas which must most faithfully reflect the very best and very maximum of the very ultimate that they expect from their way of life. This political idea must ultimately be developed into genuine fanaticism . . . into a sort of political religion . . . and it must draw into its orbit the widest strata of population and not only certain castes. History of guerrilla warfare has proved conclusively that a guerrilla war is invariably preceded by an ideological fight. It is because, only a strong ideology . . . a strong inner spirit . . . can make a guerrilla war explode. That spirit must be sufficiently courageous to tread the long and difficult road of suffering up to the moment when the enemy in power is finally defeated. Only a clear

awareness and a continuous devotion to the ideology of guerrilla movement can bind the fighter to his duty since he is free to sever his connections any time. This alone can make the oppressed, the colonised and the tyrannised people raise their fists, threatening to eliminate the cruel, the oppressor, the tyrant and the coloniser. The ideology of the spirit of freedom alone serves as the source of strength and will power to initiate a war against a strong enemy with well organised troops. **Traditions and Temperament:** — Traditions and character of a people are important factors in a people's war. As each army creates its tactics and strategy according to the national character, so each underground movement has its own characteristics based on this fundamental element. History is a witness that not all nations . . . not every people, are easily adaptable to underground war . . . Experience has shown that people who have an inborn sense of discipline and respect for constituted authority, cannot and do not make good guerrillas. As against this, people who have their native treacherous cunning and taste for intrigue, conspiracy and adventure make ideal material for such a type of warfare. Professions and occupations of the masses of the people also have a far reaching, almost decisive influence and the part that they can play in such a movement and warfare. An affluent people used to life of ease and comfort, generally do not prefer to be drawn into such type of warfare, and if they happen to be drawn in, they do not show the endurance capabilities that the nature and character of warfare would inevitably impose on them. As against this, people living on mere margin of subsistence, despite hard physical exertions, amidst plenty, and as such, not having much to lose, make the ideal manpower. **Geographical Elements:** The Subject of geographical structure, the nature of terrain, is exceedingly important to any type of military operations. It certainly is much more so in the case of underground resistance movements.



**No Bank pays Interest on
a Current Account...**



**Prompt
Service**

**But Bank of Baroda
pays Attention!**

That something extra... swift, friendly, efficient service. Welcome to the busy businessman.
Also : • Unlimited withdrawal facilities • Issuing of a periodical statement of Deposits and Withdrawals. (To simplify your record-keeping). • Acting on your Standing Instructions about payments and collection of dues.

Get personal attention! Open a Bank of Baroda Current Account.



Thou shalt forever be prosperous with

Bank of Baroda

A network of over 600 branches in India and abroad—in U.K., East Africa, Mauritius, Fiji Islands and Guyana.

POWER CABLES BRING YOU

PRODUCTS THAT SPARK PROGRESS
CUT COSTS—IMPROVE PROFITS—INCREASE PRODUCTION

INSULAST® CABLES & WIRES

single or multicore;
armoured or
unarmoured, 1.5 sq.
mm. to 1500 sq.mm
conforming to IS: 694, 1554, 3035,
and to customer's specifications

(Also available on DGS & D Rate Contract)



'POWERLINE' A.C.S.R. & A.A. CONDUCTORS

of all sizes and constructions.



'POWERYINYL' PLASTIC COMPOUNDS

for cable insulation,
footwear, pipes, tiles,
conduits, moulded
products including
toxic and non-toxic
P.V.C. compounds for blow moulded bottles etc.



POWEROIL® SPECIALITY OILS

transformer oil, white oil
refrigeration oil, pure food
oil, agricultural spray oil,
orchard oil, rubber extender oil,
instrument oil, supercut cutting oil,
special grades of greases, waxes etc.



'CEMA' RADIOS & ELECTRONIC COMPONENTS

Single and multi-band,
transistors and A.C. +
valve radios; amplifiers,
mini fans, radio components
loudspeakers, etc.



'SARAS' FOODS

a complete range of
processed foods including -
dehydrated and spray-dried
fruits and vegetables; dairy
products; concentrates; pickles; chutneys;
mango etc. slices in brine.



POWERARC® WELDING ELECTRODES

general purpose and
special types mild steel,
stainless steel etc.



(Also available on DGS & D Rate Contract)

'POWERSTEEL' FERROUS WIRES

galvanised or ungalvanised,
patented or unpatented,
hard drawn or annealed,
high, medium or low carbon.



ALUMINIUM ROD ROLLING

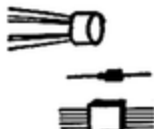
all sizes of E.C. grade ingots
into all sizes of rods.



SOLID STATE DEVICES

integrated circuits, transistors,
diodes.

Also undertake subcontracting
work for internationally reputed
U.S. based firms



'CEMARC' WELDING ELECTRODES

general purpose and special
types.



GALVANISED TRAPEZOIDAL ARMOUR TAPE—

conforming to IS: 1554
(Part-I).



"There is no substitute for experience."

"Power Cables give you maximum value for your money."

Free technical service provided on request.

POWER CABLES (P) LTD.



- Vithalwadi, Post Box No. 4, Kalyan (C. Ry) Tel. 122, 257, 266 Uthaneswar, 348, 349, Kalyan.
- 24, Brelvi Sayed Abdulla Road, Bombay 1 Tel. 254593, 251017, 251557, 250496.
- 184/185 Golf Links Area, Post Box No. 3004, New Delhi 3 Tel. 617654, 616931.
- Gul Mohar Building, 6C-Middleton Street, Calcutta 16 Tel. 443554.
- 43, General Patters Road, Madras 2 Tel. 811630.
- 15 E Sringer Shopping Centre, 12/12A M. G. Road, Bangalore 1 Tel. 54946.

"Tomorrow's Progress Today"

FUNDAMENTAL POINTS

BIRTH, growth and development of a People's Revolutionary War is essentially dependent upon five main points . . . **Organisation, Time Dimension, Space Dimension, use of Subversion and Terror, and the exploitation of contradictions.** They have to be understood in their minutest details and utilised most carefully to ensure success.

ORGANISATION :—In a People's War, the primary weapon of the insurgent movement is its political subversive underground organisation within the population. The secondary weapon is the guerrilla force which depends on the underground organisation for all its requirements but, which at the same time, supports the advance of the underground organisation into the heart of the threatened government and the country. The political arm is, therefore, dominant and guerrilla operations are designed to achieve political rather than military results. The whole success of an insurgent movement depends, therefore, entirely on the underground organisation. If it is expanding like a virus within the body politic of the country then the guerrilla units, which are the open manifestation of the disease, will be spreading and erupting all over the surface of the country. If the underground organisation is advancing and expanding, control over the civilian population of the country-side, and casualties inflicted on the guerrilla units can, not only be made good, but their strength can even be increased. Throughout the guerrilla phase, it is in the forefront of the advance. During the final phase of war, it remains responsible for achieving the political objective of the insurgent movement and for providing a credible new government for the country. Even in defeat, an insurgent movement will willingly sacrifice all its military units, only if it can preserve some of its underground organisation intact within a country to await a more favourable opportunity.

The organisation of a viable guerrilla movement is a class by itself. It is a combination of secret and open structures, political and military apparatuses and mass and front institutions. It is characterised by its **comprehensiveness, flexibility and effectiveness . . . comprehensiveness allowing the organisation to reach every body under the influence of the movement; flexibility allowing its structural forms to fit into every group in a community and effectiveness providing a formidable structure, hard to destroy and suitable for both attack and defence.** In order to mobilise the population for a total war effort, every inhabitant under the guerrilla control is made to belong simultaneously to at least two organisations. The **horizontal** based on geographical organisation and the **vertical** based on categories of people . . . age, sex, profession, etc. The **nucleus** of a guerrilla movement from which the organisation ultimately develop is highly clandestine, its activities are mainly conspiratory and it always operates under cover. It is organised by a group of dedicated, resolute, desperate men who are the leaders of the venture. Once this is firmly established, it sets out to expand the organisation. Agents from the nucleus are sent to the various parts to form new organisations and infiltrate the existing institutions by means of a **'nuclei process'** . . . the sending of secret agents into an existing organisation to build **'cells'** within, so that power in that organisation is wrested from the old command. **Front organisations or 'fronts'** are overt organs of the guerrillas. They can be either old or new organisations, but all of them are under the

secret manipulation and control of the guerrilla high command through the 'cells' it has within. They are legitimate structures under the law of the existing government operating openly in the 'enemy' territory within legal limits but serving as the mouthpiece of the covering agency or the recruiting machine of the guerrillas. **Mass organisations** are the creations of guerrilla agents. They can be either **overt or covert**. Overt organisations are designed for mass struggles, such as demonstrations, rallies, riots, strikes, etc. Other organisations, also organised within the limits of law, have secret leadership of the guerrilla agents. These organisations are built for the purposes of intelligence, communications, terrorism, sabotage and propaganda. The membership of such organisations is more selective than that of overt organisations.

TIME DIMENSION:—Time (or perhaps, patience) is the greatest asset of an insurgent movement. Its value is enhanced if the threatened government, and other countries which support it, are themselves impatient. In its broadest sense, time, the long arduous and protracted struggle, provides the insurgent forces with the opportunity to purify themselves through fire and instill in the threatened government forces a growing sense of futility. Time allows for the exploitation of opportunity . . . advancing when the trend of world events or circumstances within the threatened country are favourable, or of lying low or even of taking "a step backward", if trends are unfavourable. It is a part of the doctrine of People's Revolutionary War that victory is inevitable, even if it takes half a century. Within this concept of time, there is the added advantage. The outward course of insurgency can constantly be altered to fit into the prevailing circumstances. Old cause and allies can be forgotten and dropped and new ones developed. This vital asset of time can be preserved only if there is the space of man-power for which to trade it.

SPACE DIMENSIONS:—The term space is used to include both ground and the people who inhabit it. If the insurgent movement is confined to just one particular area of a country, or to one particular section of the population, any reasonably effective government can isolate and eradicate it without much trouble. It is for this reason alone that, during the build up phase, an insurgent movement must penetrate all sections and classes of the community. Similarly, on this very ground, the insurgent movement must make the government feel threatened throughout the country. With inferior forces, the insurgents initially depend on the remotest areas of the country, particularly mountains, jungles or swamps, which can provide sanctuaries. For armed guerrillas, there is a great deal more space in a few square miles of jungles than there is in several hundred square miles of developed and populated country side. When the guerrilla phase starts, the initial aim is to gain space, which in turn guarantees more time. Control is then begun, first in the remotest villages and, thereafter, gradually extended inwards . . . **using villages to encircle the towns**. With the government forced to fall back in its effort to defend the main towns and communications, the guerrillas obtain space in which to launch a war of movement of a sort.

TERROR AND SUBVERSION:—Terror and subversion are indispensable weapons of guerrilla warfare. Their strategic and tactical importance is always supreme and their correct employment critical to guerrilla victory or defeat. It is because these are the only two weapons which can make life un-endurable for the enemy, eliminate traitors, persuade neutrals and change the behaviour of the entire community. However, the use of these weapons has to be guided and dictated by caution, consideration and sagacious restraint. It has to be borne in

mind that it is only when these weapons are used wisely and relentlessly that they can strengthen the cause and operations of the guerrillas. And when these weapons are used unwisely and indiscriminately they prove more likely to alienate the people than to attract them to the guerrilla cause. In the guerrilla concept, the functions of terror and subversion are manifold. However, the more important of them are to intimidate the enemy, to help persuade and win-over the neutrals, to dissuade the possible and potential deserters and to gain publicity. Authors and architects of guerrilla movements have themselves conceded that those who are attracted to the insurgent movements as a result of the two weapons fall into three clear categories . . . **the neutrals, the converted and the deceived.** The neutrals would consist of many types, ranging from the idealist to the criminal, those who do not have any prospects for themselves in the existing society but claim to have great confidence in their talents to make the grade only if they could obtain positions to demonstrate and utilise them. The converted would include those who join because of government excesses and abuse of power by the minority. This category will also include those who have close friends and relations in the insurgent movement. The two main elements among the deceived would be those who join for legitimate reasons but later find themselves committed to wholly different task. This category will also include those who may be abducted in groups, involved in terroristic activity and then used for the insurgency cause. In respect of the population generally, the use of terror and subversion has two fundamental purposes . . . to eliminate from within the population all those individuals who might be expected to rally the community against the insurgency and to provide, both official and unofficial leadership to the insurgency. In so doing the second purpose . . . that of integrating the population with the insurgency is automatically achieved.

EXPLOITATION OF CONTRADICTIONS:—It stands to reason that a vastly inferior force cannot hope to defeat a superior government force, aided possibly by other friendly powers, and to impose on the country a new government, contrary to the will of the majority of the people, when given a free choice. An insurgent movement cannot and does not expect to win solely by its own positive actions or by the appeal of the cause. On the contrary, while making full use of the assets of '**cause and appeal**', it has to exploit fully the weaknesses of the government side which are found located in the contradictions of theory and practice of the socio-politico-economic realities. No governments can be perfect and immune from adverse and hostile criticism, particularly on the score of waste, taxation, abuse of power and corruption. These very factors render the governments most vulnerable to guerrilla exploitation. Restrictive and repressive measures, which the governments have to take during insurgency, cannot all be palatable to the masses of the people. They, therefore, provide further fuel to the fire which guerrillas would aim to spread . . . to erode the authority and the prestige of the Government and ultimately bring, both the government and the society within the country, to a state of collapse vis-a-vis the government policies and objectives and then mount the offensive to wipe out the very existence of the government.

PREPARATIONS:—No wars break out by the touch of a magic wand. They all need a cause and extensive and intensive preparations and build up within the framework of that cause. It may not immediately appear to be impressive and convincing, but the fact is that preparatory phase of the guerrilla warfare is particularly long, laborious, time-consuming and, therefore, extremely patience taxing and exhausting. Because of its extremely complicated, difficult

and delicate nature and seriousness, it always requires **specialised skills** at the command level and **devotion and dedication or 'commitment'** of the highest order to the cause and the people at the **cadre level**. These needs stem from two major factors. In the first instance it is the vital need to operate the process, which in management theory is called **'feed back'** and which in the guerrilla parlance has been given the glamorous title and slogan **'from the people unto the people'**. Secondly, the guerrilla uprising may be sparked by an outside power. However, it will ultimately have to find its power fuel from the local sources and resources . . . both of men and material. Bearing this in mind, the first task of the guerrilla leaders will have to be to prepare comprehensive analysis of the various segments of the society in the intended theatre of operations. This analysis will have to be from social, cultural and economic view point, rather than from the view point of physical factors. It is from this analysis that they will have to build, what has since been called **'primitive political programme and primitive operational policy'**. This primitive programme and policy will then have to be checked up at the grass root level so that theory and practice merge into reality and lead to the build up of a **'realistic political programme and concrete war plan'**. The entire process can be easy if the intended theatre of operations is under foreign occupation. However, the task would be infinitely difficult if the intended theatre of operations has its own established government, its own socio-political order and its own vested interests at all levels of the community life. In this case, internal contradictions will have to be exploited most systematically and scientifically to ultimately project the ruling authority as approximating to a foreign and tyrannical ruling authority. The process under both the conditions would need absolute rejection of the authoritarian approach. It will have to be borne in mind that, whatever the hazards and hardships under the existing order, the people would not easily risk their lives and their **'interests in being'** for the promised new order unless they are convinced by an intensive process of indoctrination, persuasion and reasoning that the new order would reflect and represent the **'very utopia of their dreams'**. This in itself would emphasise the originality and flexibility of the final political programme or the concrete war plan designed to meet and satisfy the ambitions and aspirations of the various segments of the society in the intended theatre of operations. This will also have to demonstrate the absolute capabilities of the guerrillas to achieve despite the very best efforts of the established government to the contrary.

PATTERNS AND STAGES:—In the post war years, guerrilla warfare has been studied extensively, both in its positive and negative aspects . . . from the view point of the insurgents as well as from that of the counter-insurgents. As a result of this, and in the context of **'force and vulnerabilities'**, the origin, growth and development has been categorised into various patterns, stages and phases. Studying the guerrilla cases in modern times, Galula has divided the guerrilla process in two major patterns . . . **the orthodox and the bourgeois-nationalist**. While discussing the orthodox pattern in greater details, Galula has listed five essential steps . . . **the creation of a party, the establishment of a united front, guerrilla warfare, war of movement and annihilation campaign**. In this discussion, he has attempted some revision of Mao's original three stage . . . three phase theory. However, he has made no mention of sabotage, terrorism and mass struggles as the essentials of guerrilla warfare. In the case of bourgeois-nationalist pattern, he has listed only two steps . . . **blind terrorism and selective terrorism**. Not very much enamoured by this pattern, he has considered it just a **'short cut to power'** in which insurgents themselves would be

messed up in the power struggle and would not be interested in the real post-insurgency problems of the people.

Among those who have discussed and debated the various phases and stages of guerrilla warfare and have propounded positive and concrete theories for each, the most prominent have been **Mao, Guevara and Thayer**. The view point of Mao has all along been considered to be the most realistic and most practical, adaptable to all situations of guerrilla warfare. Guevara, has also been considered very much identical to Mao. Not much importance has been attached to the view point of Thayer. However, present day theoreticians have gone further to evolve their own descriptions and elaborations, which in their view point, include all the major ingredients of earlier debates and discussions. The process has not ended. However, as at present, the guerrilla warfare process stands divided into the following stages and phases :—

(1) Preparations :—In this stage a group of determined rebels join hands to find a cause and to set up an organisation. After the cause is well defined and the organisation is viable, they start clandestine propaganda to sell the cause and further expand the organisation. **(2) Initiation :—**When, as a result of the effort in the preparatory stage, the guerrillas feel strong enough, organisationally and ideologically, to take some sort of field actions, they step into the second stage... initiation. In this stage, non-military destructive operations are initiated... particularly sabotage and terror. Fronts are built, and mass organisations are set up openly. Organisational and propaganda activities become widespread and much intensified. Public attention is gained by terror and sabotage. Anti-guerrilla elements, both inside and outside the government, are intimidated the community is considerably aroused and day-to-day functions of the government increasingly disturbed. Intelligence network is further intensified and elements of co-ordination are introduced at all levels of the conflict, demonstrating thereby, near approximation of the guerrilla forms to a regular fighting machine, though in its own peculiar way. **(3) Violent Struggle :—**This stage is distinguished by 'near matching strength vis-a-vis the government' and wide-spread violence. There are strikes, massive demonstration, bloody riots in the cities and guerrilla operations in the rural areas. As a result, metropolitan areas are considerably paralysed and rural districts move under turmoil. The organisational work and propaganda are further intensified to ensure that the cause is universally spread, mass and front organisation are fully active, intelligence tendrils penetrate deep into every governmental agency and every social group and sabotage is carried out according to plan. However, military operations still proceed cautiously, but not without the proof that the guerrilla forces are ready move into the theatre of military operations in a big and effective way. The military operations later pass through the following phases :—

(1) Self Preservation :—The guerrilla in this phase being militarily weaker than the regular enemy armies, operate in a small way, employing mostly hit and run tactics, and making every possible effort that their newly created military arm is not committed to any pitched and frontal actions and is, therefore, not prematurely destroyed by the superior enemy regular forces. **(2) Expansion :—**This phase is reached only when the guerrilla forces are bigger, stronger and better organised and equipped to deal lightening blows at the enemy continuously. The operations, even at this stage, are distinguished by concentration on cutting enemy lines of communications and ambushing his

Helping one battalion speak to another. Assisting an Army patrol transmit strategic information to Headquarters. Today, ITI assists the Indian Army bridge the communication gap in inaccessible 'forward' areas.

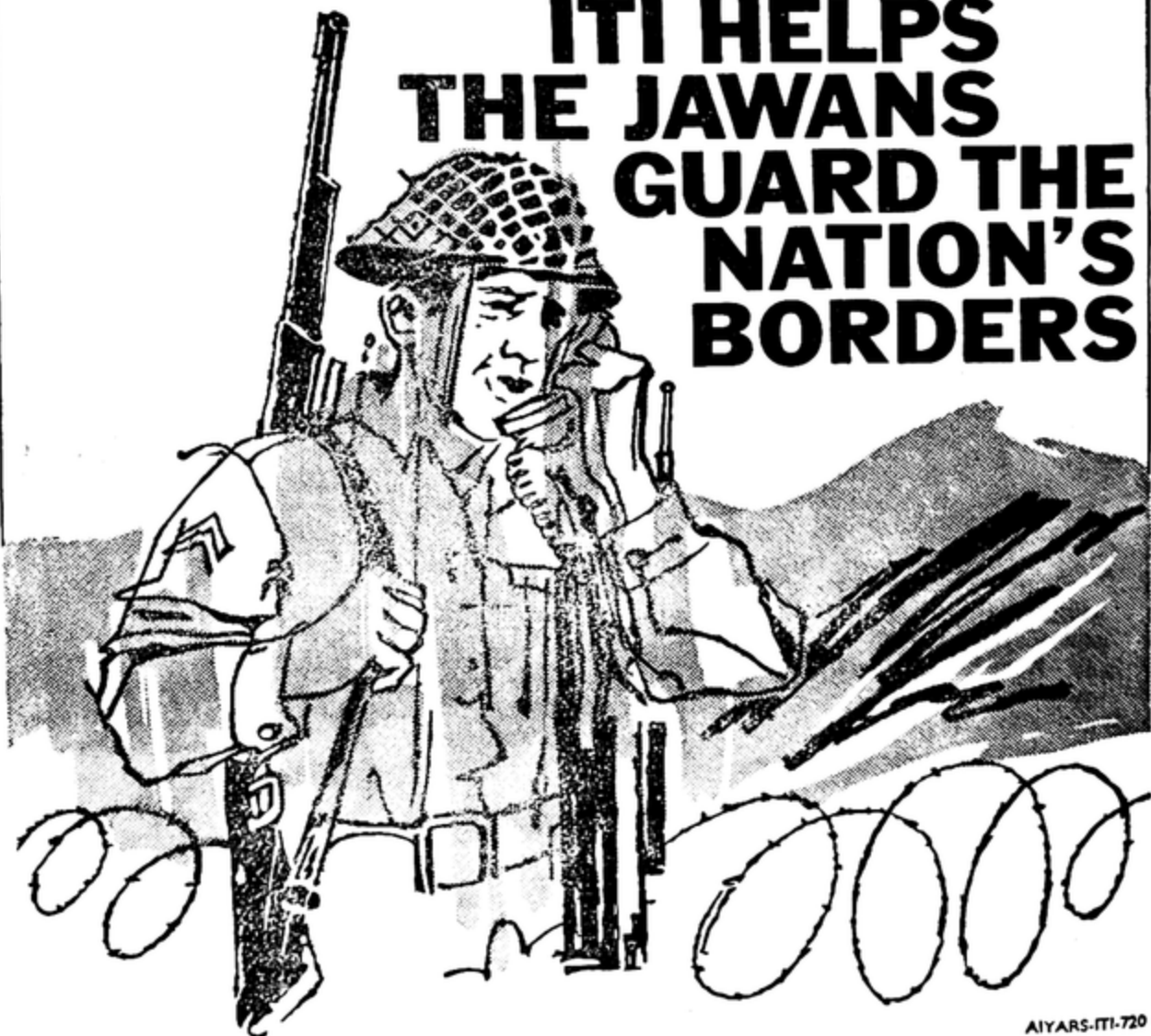
ITI has designed, developed and manufactured light-weight, transistorised, multi-channel transmission systems for telephone and telegraph, and special, rugged field telephones

for the Defence Services — to provide long-distance communication over land and radio. These equipment are sturdily built to stringent specifications to weather the most adverse climatic conditions.



**INDIAN TELEPHONE
INDUSTRIES LIMITED,
BANGALORE-16.**

ITI HELPS THE JAWANS GUARD THE NATION'S BORDERS



AIYARS-ITI-720

detachments. Although, still weaker than the regular forces, the guerrillas in this phase are in a position to achieve regional superiority at will and score some local victories helping them to further their cause and boost up their morale. It is in this phase that the guerrillas start setting up semi-permanent bases. **Conquest:**—In this phase, guerrilla power is mature, equal to or rather spread and much intensified. Public attention is gained by terror and sabotage. An- stronger than the enemy forces. It, therefore, starts operations in battalion, regimental or even divisional formations and conduct major campaigns. It is in this phase that they start wooing the enemy to talk or surrender.

GUERRILLA VS. REGULAR, FUNDAMENTAL DIFFERENCES.

DESPITE the extensive use of guerrilla warfare in recent years, there is still widespread misunderstanding and blurring on the fundamental differences between the guerrilla and regular warfare in the field of organisation, administration and operation. In order to present a clearly defined picture of the two forms of warfare, military theoreticians have repeatedly enumerated and emphasised the fundamental differences. Following have been cited as the more important of them.

CONCENTRATION VS. DISPERSION: In normal war, the strategic objective is clear and fixed...the destruction of the enemy on the field of battle. Its successful accomplishment implies the concentrated use of every possible means on the ground, in the air and on the high seas, according as the battle context may be. As against this, the battles of underground warfare, if they can be called so, have a totally different character. In guerrilla warfare, there is no battle-field in the proper and generally understood meaning of the term. In guerrilla warfare, there is no such thing as major and decisive blow. On the contrary, there are small blows struck ceaselessly, at all times and at the least suspected targets. This particular feature is defined as dispersion in time and space and stands glaringly opposed to the maxim of concentration in regular warfare. Concentration on one side and dispersion on the other . . . in this anti-thesis lies the first essential and fundamental difference between the strategies and tactics of the two types of warfare.

CENTRALISATION VS. DECENTRALISATION:—From the above said difference has emerged the difference of the strategies of centralisation and decentralisation. The first, generally characterises the strategical and tactical actions based on concentration. The second governs the strategical and tactical actions based on dispersion. The strategy of underground warfare is that of decentralisation, as it affects command, organisation, communications and replenishment of supplies. This is made necessary, not only by the need of dispersion in the struggle, but also by the illegal atmosphere in which all underground movements are compelled to function.

THE REAR:—In modern mobile warfare the front lines and the rear are clearly defined. Although rear, even in modern warfare, has come to occupy greater importance, yet it has not and it cannot occupy the same importance as

in guerrilla warfare. In guerrilla warfare, the rear of the regular armies is the only area of operations and it, therefore, means the very front line area for them. It is only by operating in the rear of the regular armies that the guerrillas can engage the detachments **in a series of isolated combats** and ultimately destroy the regular armies. Under the circumstances, the ideal of guerrilla would be, by dispersion to split up a campaign into a series of isolated combats in which the regular armies are unable to make use of their numerical and material superiority and are also unable to survive the '**mosquito bites**' of the guerrillas.

THE TARGETS:—Regular armies without well defined targets are powerless. They can hold what they actually occupy . . . they can occupy what they can cover with the range and radius of their weapon systems. As against this, the essential foundation of guerrilla warfare rests on the art of constantly escaping from the enemy. They seldom, if ever, offer any targets. Whereas regular armies seek to preserve contact, the irregulars seek to avoid it. Whereas regular armies seek to destroy the opposing forces in frontal assaults and pitched battles, the irregulars seek to destroy enemy material and seek action at points of least enemy concentration.

STRATEGIC OBJECTIVES:—In the regular warfare, the word strategic has a clearly defined meaning. As against this, guerrilla warfare can hardly talk about strategic objectives. The characteristic use of strategy in regular warfare is the use of battle for the purposes of war. As against this, the characteristic mark of guerrilla way of fighting is **harassing** and this in itself is not decisive. It can contribute to the ultimate decision only by linking up with the regular strategy of the friendly or allied army. This is the reason that the guerrilla combats proper do not recognise either offensive or defensive strategic objectives. For them, offensive or defensive value lies in the extent to which they can influence the strategy of the regular invading friendly or allied army. However, a resistance movement organised for an invading army acts in support of the offensive strategy and consequently assumes an offensive character. When the strategy is applied against the local army, it assumes an essentially defensive character. However, it still remains essentially defensive in character. However, it still remains tactically offensive because it is always either attacking or retreating, never at standstill.

ELEMENTS OF TIME AND SPACE: — The fundamental elements of strategy . . . **time and space** . . . are particularly important to the conduct of guerrilla warfare. A popular rising like any other military operation, has to occur in the right place and at the right time. However, from the strategic view point the time factor has totally different value in guerrilla warfare. Whereas regular armies exist before the outbreak of hostilities, the guerrilla movements are invariably organised either during the conflict unleashed by the incumbent governments and their armies or when the regular armies are defeated in the field of battle and the occupation forces have to be thrown out. The political organisation necessary to muster the mal-contented, nationally, socially or even patriotically, entails hard work and reaching the masses by propaganda, which is generally characterised by the established authority as sedition, treachery and betrayal, is a long and hazardous task. From the view point of place, the more important a region strategically is, the greater obviously is the value of the risings. Generally, highly civilised and industrialised countries, with greater disparities in standards of livings, are more sensitive than others. However, the hazards are that these countries are invariably better organised for defence

and security. Further, in guerrilla warfare, the strategic importance a region is determined principally by the operation of the regular armies and its economic and industrial value to the enemy. In these days when everything is tied to the war machine and all regions are considered in terms of military economics, all have their own peculiar value. In the present day unlimited warfare, belligerent powers may even start a revolution in a neutral country merely to deprive the enemy of important economic aid. In certain circumstances, this proves to be more profitable than bringing the neutral country into the war. Added to these considerations, there is yet another consideration which has assumed vital importance currently. In a world of conflicts it has become possible to start several popular risings in widely separated areas and synchronising them in time and space, both with each other and with the strategic operations of the regular armies. In this way can be created reciprocal effects similar to those between separate battles in a regular campaign.

STRATEGIC MOVEMENTS:—Strategic movements in guerrilla warfare are very different from those of normal war. In guerrilla warfare, strategic movements are generally restricted to the areas of their origin to which they are bound by their **cut and run tactics . . . of ambushes and sudden blows**. Guerrilla operations in other regions are generally in the nature of raids. The farther they range from the source of their origin, the more likely they become to lose their advantage of the knowledge of localities, the ground, the inhabitants and their manners, customs, dialects, linguistic peculiarities etc., so vital to the success of guerrilla operations. As such, they find it very difficult to effect any large scale movements as regards extension of force and strategic objectives because of their needs to always operate secretly and maintain their characteristic of purpose. Besides, the success of their large scale operations would call for exact co-operation in time and space and strictly centralised command. Neither of these conditions would be likely to be found in resistance movements, which by their very nature are illegal.

BASES:—The concept of bases in guerrilla warfare is wholly different from that in regular warfare. Guerrillas have no back areas. Consequently they have no bases in the sense and for the purposes that the regular armies have. However, guerrillas, particularly in the initial stages of their struggle, need safe pockets to organise, control and conduct their hit and run operations. These pockets, called bases in current military parlance, are set up in the country concerned, if the terrain is suitable. They are usually small, carefully concealed and well dispersed. Unlike in the case of the regular armies, no attempt is made to defend them, if attacked. It is because, in the concept of guerrilla warfare, survival of the guerrillas is any time more important than the retention of territory. The ideal position for the guerrillas is to be in possession of, not only secure bases, but also **inviolable 'sanctuaries'** accessible to them, but not the enemy. These are generally situated across an international border in a neighbouring country which is sympathetic to the guerrilla cause. Resistance movements are almost independent of terrain and lines of communication. As regards provisions, guerrillas live principally on the country itself. Their requirements in ammunition are comparatively very small and bulk of these have to be met by **'capture from the enemy'**. Bases in guerrilla warfare are not required to serve any of these purposes.

THE FIGHTERS:—Guerrilla wars are declared, not by the governments but by those claiming to be revolutionaries and acting on behalf of the people.

Under the circumstances, therefore, guerrilla armies, if they may be called so, are recruited from volunteers who pride themselves in being political fighters. They are generally drawn from the ranks of have-nots, the discontented, the high aspiring and yet frustrated youth in the cities and rural areas. They are generally not the kind of people who would easily accept submission to military discipline and officer hierarchy of regular armies. By virtue of the very fact of their association with political movements, they claim to have higher morale. However, in their ultimate maturity, the guerrillas have to be brave, hardy, dedicated, willy, with abundance of adaptability, imagination and discretion, never revealing what they know and capable of living a harassed life.

Soldiers in regular armies have to accept regular discipline. In addition, they are tied down to the laws of the established governments. Soldiers in regular armies have, therefore, to deny themselves a large measure of personal freedoms. As against this, guerrillas in their ultimate maturity proudly arrogate to themselves **two forms of freedoms**. The first is achieved by them when they **shed or escape from the restrictive mantle of law and order imposed by the established government**. Virtually no law hampers them. No longer the dour of law frightens them. This escape then achieves for them the second freedom . . . **the freedom of physical movements which leads them to the avenues of experience and adventure and adds to their total mental reservoir of knowledge**. Motivation is another characteristic of creative people which makes the guerrillas so extraordinarily inventive and effective. It is this motivation which drives them on in their tactical attacks and helps them to see an idea through to its logical conclusions. In the process of participation, the guerrillas become habitual rag-tag renegades, hunted frequently and forced to go it alone. A guerrilla would be fortunate if he is all the time accompanied by some of his comrades. In this impelling struggle for preservation and fight, his intellect begins to effervesce and to turn out more shrewd ideas. They germinate on account of the favourable circumstances. Under the peculiar circumstances of participation, the guerrillas have the freedom from criticism and censure even from their own comrades. Being non-conformists with strong and irresistible motivation, they use the local populace and natural resources around them, as well as the weapons and other supplies captured from the enemy, to the maximum advantage of the objectives of the struggle.

THE LEADERS:—The type of men most suitable for guerrilla warfare not so easy to find. They have, therefore, to be trained and disciplined in the peculiar guerrilla way, by consent, regular and systematic indoctrination, coupled with temptations of rewards and threats of punishments. It, therefore, becomes necessary that guerrilla leaders are unyielding in their policies and resolute, loyal, sincere and robust. They have also to be well educated in the revolutionary techniques, self confident, able to establish severe discipline and able also to cope with counter propaganda. According to Thayer **'Guerrilla leaders must have the charisma to attract and hold the loyal following, organisational skills and above all ruthless determination to maintain discipline within the ranks, as also to enthuse and inspire the non-actives. They must, in fact, be political governors of the areas where their writ runs . . . administrators for civil governments, the police force and the judiciary to mete out punishments as they would deem fit. Above all, they must have full and intimate knowledge of the terrain and the ability to extract maximum advantage from it.'** This would easily lead to the conclusion that, in secret activities and guerrilla warfare, the personality of the leader is of supreme importance. Guerrilla warfare requires a very special kind of leadership. It is not altogether a question of military capability. In

fact, technical knowledge required is of a relatively simple nature. The command of guerrilla bands, which generally consist of most diverse elements calls for psychological instinct more than military skill. The guerrilla leaders in this particular context have to possess the following qualities especially :

(a) They have to be the men thrown up by the people themselves and accustomed to simple and rugged life. (b) They have to be capable of keeping secrets and to so organise even important actions that as few people as possible are in the know. (c) They have to be born conspirators and able to deceive, not only the enemy, but even their own comrades, should it become necessary to hold the overall plan secrecy. (d) They have to be able to exercise effective command over their men and instill and infuse them with the cause to the extent of political fanaticism. (e) They have to be alert, inventive and resourceful with quick judgement and appreciation of events and surroundings and capable of reacting favourably to their own plan of action. (f) They have to possess moral courage to take the responsibility and the will to accomplish missions. (g) They have to be physically vigorous, self denying and, therefore, able to accommodate, adapt and adjust themselves to the surroundings, howsoever hard and hazardous.

THE RESERVES :—The task of reserves, whether strategic or tactical, has a double purpose in regular warfare . . . to redress dangerous situations and to deepen and widen the successes already achieved. . . However, reserves do not exist in guerrilla warfare to serve the purpose as in classical strategy. In guerrilla warfare it would be illogical to try to remedy a dangerous situation by throwing in large reserves. This would, in fact involve the guerrillas in a kind of regular battles which would be wholly contrary to their very fundamental principles of warfare. In guerrilla warfare, dangerous situations would be redressed, not by committing to battle strategic reserves, but by diversionary actions which would compel the enemy to draw off his forces into different regions and thereby provide vulnerable points. To manoeuvre on these lines, a well directed resistance movement has to be constantly planning diversionary actions. It has to prepare schemes, material and the required manpower much in advance. The problem of enlarging or consolidating success is, however, a different matter. Here reserves can be thrown as in normal warfare. This has however to be done without any attempt on the part of the guerrillas to abandon their own peculiar method of fighting. Just as in the methods of employment, so also there are certain peculiarities in the creation of guerrilla reserves. One of the exceptional, as also the most commonly used, method is the creation of a number of strictly isolated secret movements which can be committed to battle individually, collectively, simultaneously or alternatively, according as emerging and developing situations may demand.

CONSEQUENCES: The after effects of People's War in every respect are more formidable than that of a regular war. They are especially so, politically and psychologically. Normal War has its objective the destruction of the opposing armed forces in battle. Land and air attacks can at best demolish the adversaries' industrial strength and cities in the rear. But People's War destroys the very soul of the nation by systematically leading it to habitual disobedience

and disrespect of law and order. As in all revolutions, People's War means complete chaos, a savage struggle, in which the end alone justifies the means. Trickery and even treachery plays a vital role. Each action provokes a reaction and consequent reprisals generate hatred to an immeasurable extent. The habit of violence takes much deeper roots in irregular than it does in regular warfare. Irregular warfare, it is corrected by the habit of obedience to the constituted authority. In irregular warfare, defiance of authority and violation of rules become a virtue. The real pain and agony of this so called "virtue" is felt only when the irregular warfare is over and power struggle sets in among the guerrillas themselves. In case they are unable to arrest and contain it, they themselves become the victims of this 'virtue' and begin to be equated with erstwhile 'reactionaries' by the new brand of revolutionaries.

Specific Chemical Make Better Products
And **HICO** Has The Range of

* Antistatic Agents * Detergents * Wetting Agents * Dye Dispersing Agents * Dye Fixatives
* Emulsifiers * Synthetic Resin Finishing Agents
And Emulsions * Softeners * Sequestering
Of Chelating Agents

AND

Many More Speciality Chemicals For Textiles,
Pharmaceuticals, Dyes, Insecticides,
Paints And Other Industries



Write to :-



RECIPIENT OF SIR P. C. RAY AWARD

HICO PRODUCTS
PRIVATE LIMITED

Mogul Lane, Mahim, BOMBAY-16.

Phone :- 4 5 7 2 3 1

— 4 5 6 0 5 3

PRINCIPLE OF GUERRILLA WARFARE

MODERN guerrilla warfare has emerged to be a war of totality based on mass movement. As a form of warfare, guerrilla warfare consists of imposing one's own will on the opponent and thus destroying opponent's strength to resist. In its simple form, guerrilla warfare aims at the conquest of the enemy. But to accomplish this guerrillas unlike regular armies, emphasise attacking the determination and mind of the enemy first. . . The conduct of guerrilla operations has been regarded political because it covers a wide range of activities which are closer to political manoeuvring than military campaigning. . . However, whatever the terminology, guerrilla warfare distinguishes itself by ideological indoctrination, manipulation of crowds, psychological warfare and para-military actions. Strategically, as well as tactically, guerrilla warfare has been recognised unique an unconventional and therefore needing certain basic conditions . . . fundamental principles, not excluding those of conventional warfare but apart and aside of them also, to develop into an effective combat force.

KARL MARX AND ENGLES:— Karl Marx and Engles in their work 'Revolution and Conduct of Popular Risings' asserted that 'Organisation and conduct of popular risings (guerrilla warfare) is as much an art as in traditional warfare. They are subject to certain practical rules, disobedience to which will lead to downfall. Karl Marx in one of his articles published in 'New Rhein-siene Zeitung' in April, 1849, said 'A nation fighting for its liberty ought not adhere rigidly to the accepted rules of warfare. Mass uprisings, revolutionary methods, guerrilla bands every where, such are the only means by which a small nation can hope to maintain itself against an adversary superior in numbers and equipment. By their use, a weaker force can overcome its stronger and better organised opponent. However, in guerrilla warfare, each aspect of the struggle has its own peculiar characteristics. The only calculable factors are those which consist of fixed and determined elements like time, space, terrain, climatic conditions, number of combatants, efficiency of transport system, quantity and quality of weapons and other auxiliary technical resources. The psychological and morale factors are intangible and incalculable and cannot be expressed in terms of figures'.

FIRST ENUMERATION: As in the case of regular warfare, the first enumeration of the principles of guerrilla warfare has come from the ancient Chinese military philosopher Sun Tzu. In recent years, studies in the theory and practice of guerrilla warfare, and the attempts to lay down set rules for the conduct of guerrilla warfare, have begun with **Karl Marx and Fredrick Engles**. It is admitted by the Marxist theorists themselves that they paid very particular attention to the struggles of the Spanish people against Napoleon, the Austrian campaign in Italy and also to the Franco-German War. In their studies, they tried to find out, how an organised popular movement, without proper arms, could be led to light with any hope of success against highly organised and well equipped armies. The military ideas of Marx and Engles have later been studied most closely by their successors and have formed the basis of Russian revolutionary strategy, first in the popular revolt of 1905-6 and then in the Revolutionary Wars of 1917-21. Writing on the subject in 1905, **Lenin** himself admitted that, 'The proven and accepted methods of partisan warfare . . . constant strikes and wearing down of the enemy in barricade fighting here, there and every where, have proved most effective'. In his final enumeration of the

*With Our Warmest Greetings
To All Officers and Men Of*

OUR GALLANT ARMED FORCES

**DEFENDERS OF OUR
NATIONAL FREEDOM AND
NATIONAL WAY OF LIFE**



**LIBERATORS OF SEVEN
HUNDRED AND FIFTY MILLION
PEOPLE OF BANGLA DESH**



**JAYANT OIL MILLS
AND
JAYANT OIL PRODUCTS
PRIVATE LIMITED**

13 SITALFALWADI, MOUNT ROAD, MAZGAON, BOMBAY-10

Phone: 373441 - 2 - 3 * Grams: 'SWEETOIL, BOMBAY'
TELEX: 2677.

**MANUFACTURERS AND EXPORTERS OF
ALL GRADES OF:—**

*** CASTOR OIL * UNDECYLENIC ACID B.P. * HEPTALDEHYDE *
ZINC UNDECYLENATE * BLOWN CASTOR OIL * DEHYDRATED
CASTOR OIL DEHYDRATED CASTOR OIL FATTY ACID *
CASTOR OIL SPLIT * RICINOLEC ACID ETC.**

principles which must govern guerrilla warfare, Lenin emphasised: (a) **Never trifle with a popular rising. Once the fight is on, it should be conducted consistently and to the bitter end.** (b) **Always spring surprise attacks, particularly when the enemy is dispersed and** (c) **Strive consistently towards the goal even by means of small success, as won day by day and at all costs. Only by these means can the normal superiority be acquired. Audacity, more audacity and always more audacity must guide the popular fighters.**

MAO TSE TUNG:—Whatever the contribution of Karl Marx, Fredrick and Lenin, it was **Mao Tse Tung of China** who later shot into world wide prominence as the author, architect or at least the perfecter of the technique of guerrilla warfare in its most modern concept. The principles formulated and enumerated in the first instance were published in the famous pamphlet '**Yu Chi Chan**'. The expression on meant, (a) Travel, Roam, (b) Strike, Attack, Rout, (c) War, Battle. However, the principles later enumerated by Mao in greater details were: (a) **Enemy advances, we retreat.** (b) **Enemy halt, we harrass.** (c) **Enemy fires, we attack,** (d) **Enemy retreats, we pursue.** To this he latter added the explanation. **To defend in order to attack, to retreat in order to advance, to take flanking positions in order to take front positions to go zig-zag in order to go straight.** He also developed the '**Sparrow Tactic**' by which was meant concentration of overwhelming force to attack with lightning speed and to disperse immediately like sparrows eating grain in the field and then flying away; the '**Sack Tactic**' by which was meant to first encircle the enemy from three sides, then close the fourth side with a strong force, so that enemy has no way to escape and has no alternative to surrendering; '**Attack the Heart Tactic**' by which was meant surprise attack on the headquarters of the enemy who could thus be easily defeated with the destruction of the centre, '**Reinforcement and Post-Attack Tactic**' and '**Post Circling and Reinforcement Attacking Tactic**'. He concluded his explanation by saying '**Simplicity, informality and evasiveness provide the basis for guerrilla tactical manouvering. Co-operation and support from people facilitate their movement and concealment. . . . Good intelligence and speedy marches create their surprise attacks. Familiarity with local terrain helps them to disperse and group.**' Mao Tse Tung considered conservation of one's own strength and the destruction of the enemy strength as the supreme governing axiom of guerrilla war. He considered all other axioms only as derived from this axiom. Elaborating his view point on the methods which should be selected to ensure this dual purpose, Mao ultimately listed six essential requirements. These requirements were. (a) **Retention of the initiative, alertness, carefully planned tactical attacks in a war of strategical defence; tactical speed in a strategically protracted war, operations on exterior lines in a war conducted strategically on interior lines.** (b) **Conduct of operations complementary to those of the regular army.** (c) **Establishment of bases.** (d) **A clear understanding of the relationship existing between attack and defence.** (e) **Development of mobile operations and** (f) **Correct Command.**

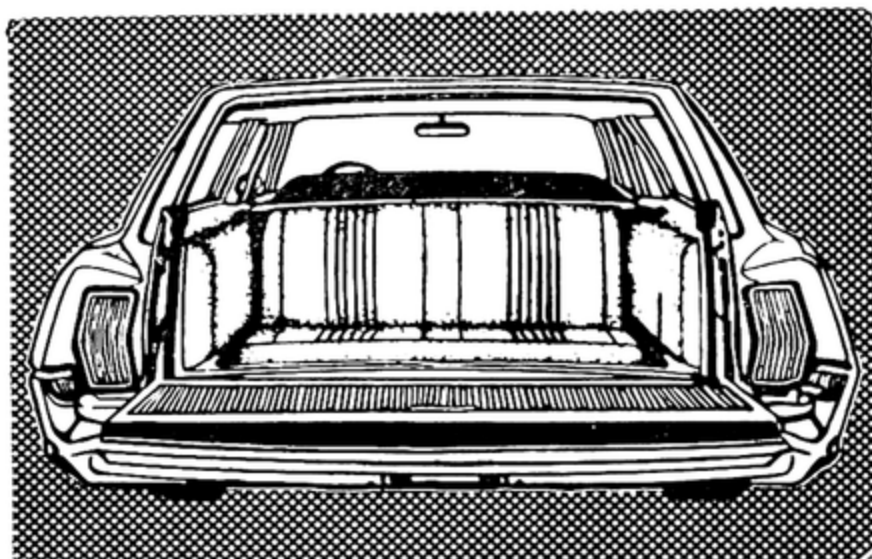
The view point of Mao Tse Tung immediately received world wide circulation. It also formed the basis of guerrilla tactics in Soviet Russia and some of the countries in South East Asia. So deep was the study and impression in the Soviet Union that the various Soviet Regulations on Partisan Warfare came to be regarded as the best codification of guerrilla tactics as conceived, propounded and elaborated by Mao Tse Tung. Principles of Guerrilla warfare as a result

of the studies by the Soviets and other countries committed to guerrilla warfare, have generally been summed up as **'surprise, mobility, sharp attacks and quick withdrawals, invariably carried out with cunning, planning and perfidy.** Summarising in greater details, the principles of guerrilla warfare have now been enumerated as; (a) **The movement must spring from a wide cross section of the population.** (b) **The war itself, by which is meant conflict between warring factions, must last long enough to allow underground movements to achieve their full development.** (c) **The guerrillas must have plenty of space in which to operate.** (d) **The character of the people, specially in tenacity and aggressiveness must be such as to allow them to fight this type of war with vigour and to its very logical conclusions.** (e) **The nature of the ground must be suitable.** (f) **The resistance movement should either be supported by regular army, with which it should co-operate or it should receive political and other assistance from a foreign power.**

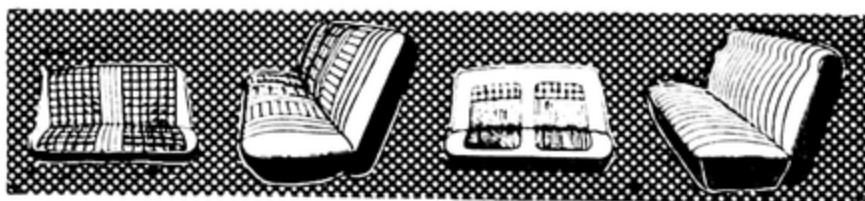
MILITARY OPERATIONS:—The nucleus, fronts, mass organisations all have one single objective. . .that of the creation of the fighting force. Ultimately, there have to be men to bear arms and wage battles of the guerrilla concept so that the final goal of guerrilla warfare. . .**the liberation of the people.** . .is achieved. However, guerrilla fighting force is not only a military machine. Structurally and functionally, it is a **politico-military machine** and so are its operations. According to **Mao Tse Tung**, the main considerations which must govern guerrilla military operations are; (a) **Retention of Initiative by which is meant alertness, carefully planned tactical attacks in a war of strategic defence, tactical speed in a war strategically protracted tactical operations on exterior lines in a war conducted strategically on interior lines.** (b) **Conduct of operations to complement those of the regular army in support or alliance.** (c) **The establishment of bases.** (d) **A clear understanding of the relationship between attack and defence.** (e) **The development of mobile operations and (e) Correct command.** According to Mao, **dispersion** in guerrilla operations has to be practiced when the enemy is in over extended defence and sufficient forces against him cannot be concentrated; when encircled by the enemy, when the nature of the ground limits action, when availability of supplies limits action and when promotion of mass movement over a wide area is desired. **Concentration**, on the other hand, has to be practiced when there is opportunity to fall upon the enemy and destroy him, when the enemy is on the defensive and there is a chance of eliminating his isolated detachments. In addition, there is the necessity of **alert shifting**, by which is meant the consideration of the situation and the decision on time and place the guerrillas must fight. Deriving from these considerations, Mao initially formulated three operational principles of guerrilla warfare; (a) **Yield any town or terrain which cannot be held safely.** (b) **Limit guerrilla warfare as long as the enemy has numerical superiority and better weapons.** (c) **Organise regular units and pass over to the general counter offensive only when victory is sure.** In his opinion the essence of these principles was taken to be: **'mobility, fluidity and skilful shift between strategic offensive and tactical defensive combinations. Speed, surprise and attack being being indispensable.** However, by 1947, when the forces at his disposal had grown considerably stronger, he listed ten fundamental operational principles of guerrilla warfare;

.. (1) **Attack dispersed isolated enemy forces first, attack concentrated strong enemy forces later** (2) **Take small and medium towns and extensive rural areas first, take cities later.** (3) **Make wiping out of the enemy's strength the main objective. However, do not permit it to mean holding or seizing of cities and**

places as the main objective. (4) In every battle, make concentration of forces absolutely superior, capable of encircling the enemy completely and committed to wiping him out completely without permitting him any escape route. (5) No battle must be fought without being fully prepared...no battle must be fought without being sure of victory. (6) Every operation must give full play to the peculiar way of guerrilla fighting...courage in battle, no fear of sacrifice, no fear of fatigue and continuous fighting. (7) Strive to wipe out the enemy when he is on the move. (8) With regard to attacking cities, resolutely seize all enemy fortified points and cities which are weakly defended by him, (9) Replenish your strength with all the arms and most of the personnel captured from the enemy. (10) Make good use of intervals between campaigns to rest and consolidate your gains and troops. (See also "Bangla Dosh" the Birth of a New Nation).



- ATTRACTIVE SEAT COVERS
- ORIGINAL UPHOLSTERY
- LOOSE COVERS ROOF LININGS
- CHANNELS CURTAIN GLASSES
- BEEDING MATTING LOCKS PAINTING



ROYAL CAR DECORATORS

35, KUMPTA STREET, NEAR BHAGWAN BHUVAN,
MINT ROAD, BOMBAY-1 WORKS CALL 264138

**OUR WARMEST GREETINGS AND
PLEDGE OF CONTINUED SERVICES
TO
ALL OFFICERS AND MEN OF
OUR GALLANT ARMED FORCES**

●

**KRISHNA
STEEL
INDUSTRIES
PRIVATE
LIMITED**

●

**RE-ROLLERS, PRODUCERS AND EXPORTERS OF
QUALITY WIRE RODS**

●

**OFFICE :- VASWANI MANSIONS, 120 DINSHAW
VACHHA ROAD, CHURCHGATE
RECLAMATION, BOMBAY-20.**

Phone : 296165 (Three Lines)

WORKS: ANTOP HILL, WADALA, BOMBAY-31

Phone : 440925

COUNTER-INSURGENCY

COUNTER-GUERRILLA WARFARE

WTH the emergence of guerrilla warfare as the most favourite form of warfare for all types of "freedom struggles", counter-guerrilla or counter-insurgency warfare has come to occupy a place of unprecedented importance with all established governments and their politico-military arms. There has since been an endless debate on the possibilities of an established government winning the counter-guerrilla struggles. Answer has been both 'Yes' and 'No'. As a form of warfare, it has been defined as an effort to save the nation from a multi-phase attack by the guerrillas. It has been conceded that success cannot be achieved solely through military operations but through a combination of political, social, economic and military action. Indeed like guerrilla warfare, it has to be a war of totality. It has further been conceded that a nation subjected to unconventional (Guerrilla) attack is actually fighting two wars. One is to defeat the immediate threat posed by the guerrillas and the other to carry the country through turmoil and frustration of modernisation and industrialisation. To reconstruct a nation under the emergency of guerrilla war is something like killing two birds with one stone. That is why counter guerrilla warfare has become such a strenuous task.

MAJOR FACTORS:—Success in counter-guerrilla warfare presupposes the presence and implementation of certain fundamental factors. The most important of them are: (a) **Support of the people:**—Guerrilla warfare is essentially a mass movement designed to win the support of the people. It takes human ingenuity and endeavour of the highest order to accomplish such a goal. Thus, the most feasible scale of measuring the strength and validity of a government engaged in counter-guerrilla warfare would not be its territory, its resources or the number of armed forces under its control. It would be the people, their organisation, their indoctrination, their loyalty and their participation in and enthusiasm for the struggle. (b) **Total Effort:**—Modern guerrilla warfare is a complicated phenomenon... a sophisticated process. To deal with it successfully, counter guerrilla warfare has also to be a total effort and every means available has to be applied with utmost skill. (c) **Dynamic Operations:**—Guerrillas have to be fought with guerrilla means by specially trained units. Important guerrilla practices like mobility, initiative, ambush, surprise attack, concealment and dispersion have to be mastered by counter-guerrilla forces. To learn from the guerrillas and then to surpass them in battle field is one of the surest means to victory. (d) **Governmental Machinery:**—No effective counter-guerrilla measures can be taken without an efficient governmental mechanism. The struggle is direct confrontation between two rivaling organisations... a protracted duel in which only the most durable and dynamic political machine can win. It has all along been a moot point as to what is the most suitable government for counter-guerrilla warfare. There has been no definite answer. However, it has generally been conceded that it is not the type of the government but its appeal, leadership, honesty and efficiency which is the ultimate criterion.

THE PHASES:—Counter guerrilla warfare has been divided into two distinct phases... **preventive and operational.** In the preventive phase the most important things are the socio-economic political reforms which should ultimately deny to the guerrillas the very essence of their 'Cause' and render it impossible

for them to fight. Prevention by means of reforms is a nation-building process which aims at winning the minds of the people and strengthening of the government as well as the society. It also diminishes the chances of exploitation by the guerrillas. Preventive goal can be achieved only through a competent and legitimate government, with a well organised and sufficiently trained population, a developing economy, with equitable distribution of resources, absence of inequality and injustice, elimination of exploitation and corruption, expousing the national values and homogenous community relations. It would take the greatest endeavour of the incumbents to accomplish such a goal, but if one keeps in mind that counter-guerrilla warfare is a task of national reconstruction, rather than of national destruction, any amount of spiritual and material investment that the government puts into the enterprise would be worthwhile.

When the preventive measure are not practical or they have failed and guerrilla warfare is already under way, the incumbent government has to enter into the operational phase. Although, the ultimate objective of winning the people remains as before, it is in this phase that strategic and tactical considerations enter into the Government's plan of operations. The incumbent government has to realise that, although there are some similarities between the two forms of warfare, yet there are fundamental differences and its operations have to be dictated and guided by the feasibilities in these movements. Guerrilla warfare is devoted to protracted struggle. As against this, the counter-guerrilla forces have to fight and destroy them in the very initial stages when they are weak. However, when the guerrillas have grown in size and strength and enter into the field of actual struggle, it would be a mortal folly on the part of the incumbent government to be in hurry. Another difference is that guerrillas are the weaker party and rely almost wholly on their hit and run tactics. As against this, the incumbent government, exploiting regular forces, would always prefer positional warfare and pitched battles, because it is only in pitched battles alone that the regular forces can hope to destroy the guerrillas. There is also the difference in the creation of the cause of the rival parties. The counter-guerrillas may of course create a counter appeal. But they can also make an appeal another way.... **just meet the challenge by taking over the cause from the guerrillas and put into practice by themselves right a way. "Stealing one's thunder is one of the most important counter guerrilla strategic considerations".**

MILITARY OPERATIONS:—Military victory is indispensable to counter-guerrilla warfare. However, in order to be victorious, armed forces committed to guerrillas warfare have to apply superior strategies and tactics giving them definite and positive operational advantages. The main considerations in these operations would be: (a) **Initiative:**—The very first objective of military operations by the counter guerrillas forces must be to gain and retain initiative. According to the German directive in "Warfare Against Bands", 'In the fight against the bands (guerrillas), the initiative must always rest with us...Even if the commander has a small force at his disposal, he must not fail to show resolution. If possible, each action of bands must be followed by counter-action. This initiative can be gained and retained only by destroying the guerrillas at their bases, keeping them under constant pressure and denying to them the opportunity to rest and regroup, much less expand'. (b) **Mobility:**—The anti-guerrillas must have tremendous speed in the concentration of their forces for attack and defence. (c) **Surprise:**—Surprise is another factor that no counter-guerrilla leader can afford to neglect Surprise in battle against guerrilla has been recognised as a

special tactical principle in command. **Intelligence** :— To win over the guerrillas in the battle-field, counter-insurgents must have a highly organised system of intelligence, which is the foundation of all successful military campaigning. **Ingenuity** :—Success in counter-guerrilla warfare also demands some organisational innovation. When dealing with an enemy who stresses irregularity and unconventionality, part of the anti-guerrilla forces must be assigned as rangers and commandos who can fight as guerrillas. They must be specially trained appropriately equipped with light firearms of tremendous firepower. They must also be highly mobile in all types of weather conditions and they must be assigned to such difficult jobs as patrol, ferret and reconnaissance. **Mopping** :—Finally, mopping up campaigns must be widely applied in counter-guerrilla warfare. They are essentially the deployment of superior military force to attack the guerrillas from all possible directions at the same time. The goal must be to wipe out the rebel bases. Follow ups of sweeping campaigns must be isolation practices in the event of failure and **'rehabilitation' in victory**.

THE PLAN :—Among the different patterns of counter-guerrilla warfare, the best known and already practiced are: **Chiang's 'Geographical Control, Mao's 'Class Control' and Wang's 'Population Purification'**. These three patterns do share many important characteristics. However, they have different emphasis. The differences have occurred because of different circumstances. Consequently, a workable plan in counter-guerrilla warfare would depend on an objective appraisal of each situation and building up a plan which may include the essentials of all and may have all the additional measures peculiar to a new situation. However, apart from regional and national variations to recover and secure the guerrilla infested areas following steps would be necessary (a) **To collect as much information about the target areas as possible.** (b) **To deploy military forces to take over the bases.** (c) **To bring in political workers to set up a local administration.** (d) **To organise the people.** (e) **To carry out economic, social and political reforms.** (f) **To stiffen the local leadership and** (g) **To use the regular military force in the neighbouring guerrilla areas and recover them from the rebels.** The final success of the Plan will depend on:—(a) **The ability and discipline of the military and political arms of the government.** (b) **The validity and morale of the local organisations.** (c) **The thoroughness of purification.** (d) **The degree of successes of the reforms,** and (e) **The training and potential of local leaders.**

With Best Compliments From :

INDUSTRIAL ENGINEERING WORKS

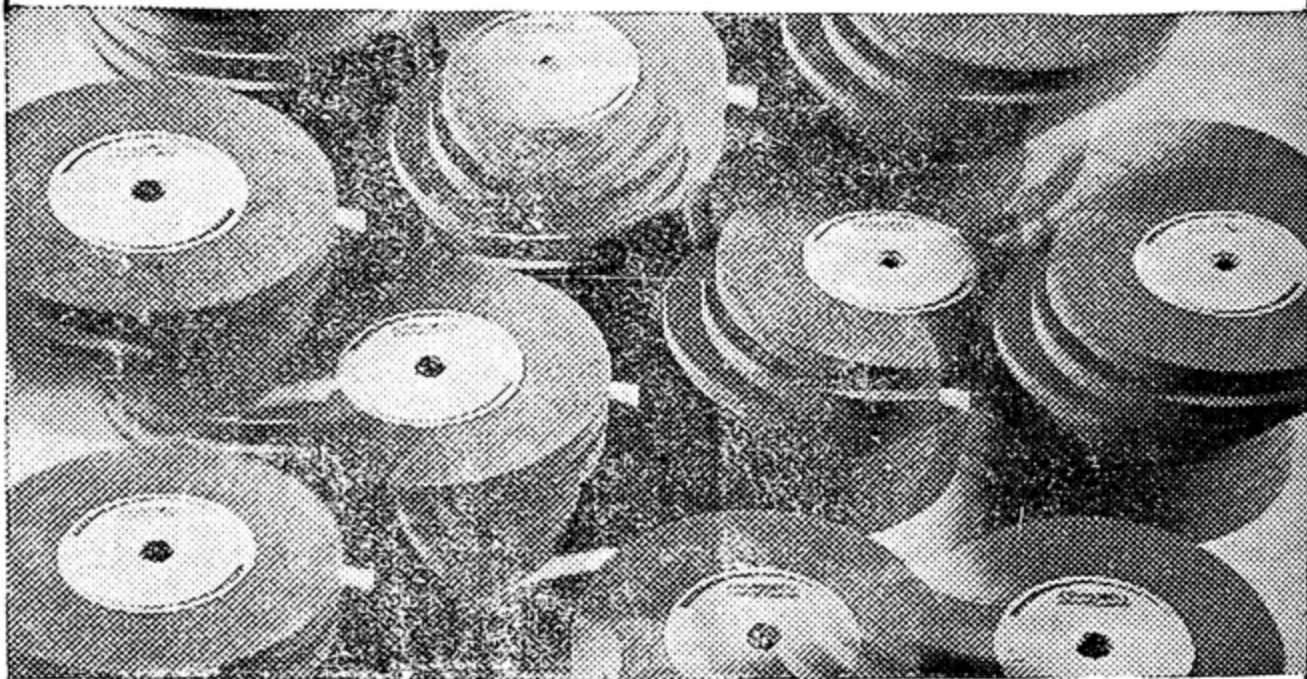
38, OLD POLICE COURT LANE—BOMBAY—1.

PHONE : 261713

Sole Selling Agents For :—

BAGSVIC ELECTRONIC INDUSTRIES

NOTHING TO CHOOSE BETWEEN THEM



The VBE, VN and VK Bonds have created a revolution in the grinding wheel industry. They have created a new record in consistency. Making for 'perfect duplication'—for wheels that are identical within each batch and from batch to batch. Establishing a major advance in sophisticated abrasive technology. The VBE, VN and VK Bonds give grinding an edge in every type of grinding operation. Intensive quality testing has proved the new bonds to more than meet Norton's international rigid standards of acceptability. They mark a triumph in high quality, high economy, high precision grinding.



GRINDWELL ABRASIVES LIMITED, BOMBAY.

In collaboration with **NORTON** U.S.A.

DAVIS GALULAS' VIEW POINT

FROM the counter-insurgent's point of view, Davis Galula of France has divided a Revolutionary (guerrilla) War into two periods, i.e. (a) The Cold Revolutionary War when the insurgent's activity remains on the whole legal and non-violent. (b) The Hot Revolutionary War, when the insurgent's activity becomes openly illegal and violent. He has conceded that the transition from peace to war is generally a very gradual and a confusing process. This is so even when the insurgent follows the short cut pattern. . . . violence is always preceded by a short period of stirrings. The situation at the cold stage is characterised by the fact that the insurgents operate largely on the legal side and only partly on the fringes of illegality, through their subversion tactics. At this stage, they may or may not be recognised as insurgents. This, however, is not the case in "Hot Revolutionary War". Force, when it comes into play in a revolutionary war, has the singular virtue of clearing many difficulties, notably the matter of issue.

COLD STAGE MEASURES:—According to Galula, four courses of action are open to the counter-insurgent under conditions of "cold revolutionary war. These courses are: (1) **Direct Action Against the Insurgents:**—This approach is made when the insurgent movement generally has no life of its own and everything depends on the leaders who are consequently the key elements. The aim of the approach is to deprive the insurgent of any physical possibility of building up the movement. This approach can work well and the movement can be nipped in the bud if; (a) The insurgent's cause has little appeal, (b) The counter-insurgent has the legal power to act, and (c) The counter-insurgent can prevent the insurgent from gaining publicity. (2) **Indirect Action Against the Insurgents:**—Essential prerequisite of insurgency is a cause acceptable to the masses and the relative weakness of the government vis-a-vis the same. The other conditions, though not absolutely necessary, are geographical factors and outside support. Geographical conditions cannot be significantly changed or excluded. Outside help is also largely beyond the counter-insurgent's reach. Under the circumstances the only effective indirect-approach can be the solving of the country's basic problems. (3) **Infiltration of the Insurgent Movement:**—An insurgent movement in its infancy is necessarily small. It is also necessarily inexperienced. As such, it is relatively easy to infiltrate with agents who can help to disintegrate it from within and derail it. If they do not succeed in this, they can, at least, report its activity. Infiltration to be effective, must be massive, overwhelming and quick acting. (4) **Strengthening the Political Machine:**—This approach consists in build a political machine at the grass root levels in order to isolate the insurgent from the population for ever. This is valid both for 'cold' and 'hot' insurgency stages. However, it is considered easier to implement it preventively than when the insurgent has already seized control of the population.

HOT STAGE MEASURES:—According to Galula, hot stage in counter-insurgency is reached when the insurgents have succeeded in building up their political movement and when they are in a position to direct either an elite part leading a united front, or a large revolutionary movement bound the cause. Although their actions, other than subversive are still overt, he, yet, they operate clandestinely. The country's map at this stage reveals three sorts of areas: (a) The "Red

Areas where the insurgents effectively control the population and carry out guerrilla warfare; (b) **The "Pink Areas"** where guerrillas are still attempting to expand and organise and (c) **The "White Areas"** which are not affected but are under threat. On the counter-insurgent's part this stage is the moment where armed forces are ordered to step in. In order to meet the situation, Galula has first prescribed four laws peculiar to counter-insurgency, and then the principles of strategy and tactics and actual operations. The laws are:— (1) **Support of the Population:**— The crux of the problem for the counter-insurgent is, not how to clean the area but how to keep clean always so that the counter-insurgent forces are always free to operate. This can be achieved only with the support of the population. The population, therefore, becomes the first objective for the counter insurgent as it is for the insurgents. This is where the fight has to be conducted. (2) **The Active Minority:**—The support of the population is required, not only in the form of sympathy and approval, but also in the form of active participation in the fight against the insurgents. The answer lies in the proposition which simply expresses the basic tenet of the exercise of political power. In any situation, whatever the cause, there is an active minority for the cause, a neutral majority and an active minority against the cause. The technique of power consists in relying on the favourable minority in order to rally the neutral majority and to neutralise or eliminate the hostile minority. The strategic problem of the counter-insurgent at this stage may, therefore, be defined to find the favourable minority, to organise it in order to mobilise the population against the insurgent minority. (3) **The conditional support:**—The minority hostile to the insurgent cannot emerge as long as the threat of punish-

GRAM :- "WHEELABRA"

PHONE - OFFICE : 325242

Mg. Director : P. G. Desai. 323214

ABRAWHEEL PRIVATE LIMITED

107, SARANG STREET, BOMBAY-3.

Sole Distributors for
COATED ABRASIVES

Made by : M/s. JOHN OKEY & MOHAN LIMITED
Mohan Nagar, GHAZIABAD.

Authorised Registered Stockists for :
Grinding Wheels, Segments & Bonded Specialities
Made by : M/s. Carborundum Universal Ltd., Madras.

EMERY GRAINS

Made by : Emery (India) Pvt. Ltd., Jamnagar.

TUNGSTEN CARBIDE TIPS & TOOLS

Made by : Sandvik Asia Limited, Poona.

ment by the guerrilla units is not lifted to a reasonable extent. Furthermore, even after the threat has been lifted, the emerging counter-insurgent supporters cannot rally the bulk of the population so long as the population is not convinced that the counter-insurgent has the will, the means and the ability to win. Four deductions follow from this law; (a) **Effective political action on the population must be preceded by military and police operations against the guerrilla units and the insurgent political organisations.** (b) **Political, social, economic and other reforms howsoever, much wanted and popular, are inoperative and ineffective when offered while the insurgents still control the population.** (c) **The counter insurgent needs a convincing success as early as possible in order to demonstrate that he has the will, the means and the ability to win and (d) The counter insurgent cannot safely enter into negotiations except from a position of strength,** of his political supporters will flock to the insurgent side. Strength in conventional warfare is assessed according to military or other tangible criteria. In revolutionary war, on the other hand, strength is assessed by the extent of support issuing form and firmly supported by the population. (4) **Intensity of efforts and Vastness of Means :—** The operations needed to relieve the population from the insurgent's threat and to convince it that the counter-insurgent will ultimately win are necessarily of an intensive nature and of long duration. They require a large concentration of effort, resources and personnel. This means that effort cannot be diluted all over the country but has to be applied successively, are by area.

THE STRATEGY:—It is at the stage of implementation of this massive and extensive effort that the counter-insurgent enters the field of effective strategy and tactics. Translated into a general strategy, the principles derived from the above said laws would suggest the following step by step procedure: (1) **Selected Areas:—** The "Selected Area" strategy is designed to cope with the worst case that can confront a counter-insurgent, i.e. suppressing an insurgency in what is generally called a 'Red Area' where the insurgent is already in control of the population. Some of these operations can obviously be skipped into the 'Pink Area' and then into the White one's. However, the general order in which they must be conducted cannot be tempered with under normal conditions without violating the principles of counter-insurgency and of plain common sense. Because the operations are spread in time, they can be spread in space. The strategy thus conforms to the principle of economy of force, a vital one in a war, where the insurgent needs so little to achieve so much, and where the counter-insurgent needs so much to achieve so little. (2) **Irreversibility:—**The myth of sisypus is a recurrent nightmare for the counter-insurgent. By following the 'Selected Area Strategy', the counter-insurgent introduces some measure of irreversibility in his operations. When troops live among the population and give it protection until the population is able to protect itself with a minimum of outside support, the insurgent's power cannot be easily rebuilt, and this in itself is no mean achievement. However, the turning point really comes when leaders emerge from the population itself and willingly commit themselves to battle on the side of the counter-insurgent. (3) **Initiative:—** This is an offensive strategy and it inevitably aims at regaining the initiative from the insurgent. On the national scale, this is so because the counter-insurgent is free to select the area of the main effort. As soon as he does it, he no longer submits himself to the insurgent's will. It is equally so on the local scale because he confronts the insurgent with a dilemma, accepting the challenge, and thus a defensive posture of leaving the area and being powerless to oppose the counter-insurgent's action on the population. (4) **Full Utilisation of the Counter-Insurgent Assets:—**If the insurgent is fluid, the population is not. By concentrating

his efforts on the population, the counter-insurgent minimises his rigidity and makes full use of his assets. His administrative capabilities, his economic resources, his information and his propaganda media, his military superiority, due to heavy weapons and large units, all of which are cumbersome and relatively useless against the elusive insurgent, recover their full value, when applied to the task of obtaining the support of a static population. **(5) Simplicity:**—There is almost no intellectual confusion in conventional warfare. It has been thoroughly analysed in the course of centuries, and the process of battle has been sliced into distinct phases. The student can learn in military schools what he has to do in each phase, according to the latest doctrine. He can also participate in manoeuvres to have practical training. This, unfortunately, is not the case with counter-insurgency warfare. There are no field games involving the task of winning the support of the population and there is no built-in criteria to assess the results of the games, if there be any. However, simplicity in concept and execution is still the important requirement for any counter-insurgency doctrine. The counter-insurgent personnel are a widely mixed group of politicians, civil servants, social workers, soldiers . . . with enough precision to channel their efforts in a single direction. The division of the overall action into successive steps following each other in logical order, facilitates the tactical task of the agents. They know at each step what the intermediate objective is and what they have to do to reach it. **(6) To Command is to Control:**—With the step-by-step approach, the counter-insurgent provides himself with a way of assessing at any time the situation and the progress made. He can thus exercise his control and conduct the war by switching the means from an advanced area to the retarded one, by giving larger responsibilities to the subordinate leaders who may have failed. In other words, he can command because he can verify.

FROM STRATEGY TO TACTICS: — When counter-insurgency strategy descends to tactics there emerge several problems peculiar to the nature of counter-insurgency warfare. Most of these problems relate to command and are known as command problems. In order of importance they are: **(1) Single Direction:**—Destroying or expelling from an area, the main body of the guerrilla forces, preventing their return, installing garrisons to protect the population, tracking the guerrilla remnants, these are predominantly military problems. Identifying, arresting and interrogating the insurgent political agents, judging them and rehabilitating those who can be won over, these are the police and judicial tasks. Establishing contacts with the populations, imposing local elections, testing the new leaders, organising them into parts and doing all the constructive work needed to win the wholehearted support of the population . . . these are primarily political operations. The expected result . . . the final defeat of the insurgent . . . is not an addition but a multiplication of all the various operations. They are essential, and if one is nil, the result will be nil. Clearly, more than any other kind of warfare, counter-insurgency must respect the principle of single direction. The problem unfortunately is not so simple. Hazards are:— (a) Tasks and responsibilities cannot be neatly divided between the soldiers and civilians. (b) No operations can be strictly military or political and (c) Howsoever developed the civil administration, it may never be upto the personnel requirements of counter-insurgency. However, single direction must still be the objective. **(2) Civilian Supremacy.** That political power is the undisputed boss, is a matter of both principle and practicability. What is at stake is the country's political regime, and to defend it is a political goal. Essential though, military action is only secondary to the political one, its primary purpose being to afford the political power enough freedom to

work safely with the population. **(3) Co-ordination.** The counter-insurgent leader has to take into account the problems of various civilian and military components of his forces before reaching a decision, especially when their actions interrelate intricately, and when their demands often conflict with each other. He has also to co-ordinate, and to channelise their efforts in a single direction. Whatever the formula adopted, it would inevitably have its merits and demerits and the very best of them would be as good as its members. The question throughout would be, how to make these mixed organisations work to their maximum effectiveness in a counter-insurgency regardless of the personality factors. **(4) Task of the Armed Forces.** The counter-insurgent's armed forces have to fulfil two different missions, to break the military power of the insurgent and to ensure safety of the territory and the people in each area. The counter-insurgent forces have, therefore, to be organized into two types of units. . . . mobile units fighting in rather conventional fashion and the static units staying with the population in order to protect them and to supplement the political efforts. The static units must obviously be those that know the local situation, the population, local problems etc. **(5) Weapons Systems.** As long as the insurgent has failed to build up a powerful regular army, the counter-insurgents have little, if any, use for heavy sophisticated forces designed for conventional warfare. The mobile units at this stage must be of the infantry type. However, they must be adequately supported by ground support and observation planes of slow speed, high endurance, great fire power, protected against small arms fire, plus short take off transport planes and helicopters, which, as experience has shown, are capable of playing a vital role in counter-insurgency operation. In addition, they should have extremely dense signal network. Adaptation to the new tasks would also be necessary in the case of static units which would inevitably be confronted with a huge variety of non-military tasks to win over the support of the population. **(6) Adaptation.** In the ultimate analysis, all forces, civil and military, would need mental adaptation to their new missions. Reflexes and decisions, considered appropriate for the soldier in conventional warfare, and the civilian servants in normal times, would no longer be right and appropriate in counter-insurgency situation. For instance, a soldier fired upon in conventional warfare, who does not fire back with every available weapon, would be guilty of dereliction of his duty. However, reverse would be the case in counter-insurgency warfare, where the rule is to apply only minimum of force. 'No politics' is ingrained reaction for the conventional soldier. However, in counter-insurgency warfare, the soldier's job is to help win the support of the population, and in so doing he has to engage in practical politics. The system of military awards and promotions, such as that in conventional warfare, which would encourage soldiers to kill or capture the largest number of enemy and thus induce them to increase the scope and frequency of their military operations, would be disastrous in counter-insurgency warfare. The administrator in peace time has to preserve politically neutral attitude towards the population. He has, as the saying goes, to let a hundred flowers bloom, a hundred schools of thought contend. This, however, cannot be the case when he is committed to counter-insurgency war and when his supreme duty is to see that only the right flower blooms and not the weed. The counter-insurgency government would clearly need leaders who understand the peculiar nature of guerrilla war. This can be done either by indoctrination and training in the technique of counter-insurgency warfare or by a priority of natural selection or both . . . both would be preferable and would lead to better results, at the right time and in the right place, will win.

Amazing how millions of people have heard of us
when we don't make a sound



THE SKF BALL BEARING CO. PVT. LTD.
ASSOCIATED BEARING COMPANY LTD.

SIR ROBERT THOMPSON'S VIEWPOINT

Sir Robert Thompson's "Defeating Communist Insurgency", published by the Institute of Strategic Studies is based on the author's experience in Malaya, and later in Vietnam, where he was the Head of the British Advisory Mission. According to Sir Thompson, the three domineering qualities in counter-insurgency are patience, determination and offensive spirit. However, the last has to be tempered with discretion and has never to be used to justify operations which are merely wreckless or just plain stupid. The government, committed to counter-insurgency operations, must never allow itself to be diverted, either by counter moves on the part of the insurgents or by critics on its own side, who might be anxious to seek simpler and quicker solutions. There are no short cuts and no gimmicks. Even modern weaponry has given only a marginal advantage because guerrillas are generally armed with captured government weapons. The only two pre-requisites and enduring assets are brains and feet. They are entirely human. It, therefore, follows that the side which has its feet on the ground at the right time and in the right place, will win.

Sir Robert Thompson has contended that, any sensible government should attempt to defeat an insurgent movement during the subversive build-up phase before it enters the guerrilla phase. In case this is not possible, owing to the circumstances perhaps, outside the control of the government, then the movement must be defeated as early as possible during the guerrilla phase. Any one having any responsibility for dealing with an insurgent movement must know his enemy and what the enemy is attempting to do at all stages. This does not mean that those responsible should be solely concerned with countering the enemy moves. Apart and aside of this, following basic principles should govern counter guerrilla warfare;

(1) Clear Political Aim:—Any government committed to counter guerrilla warfare must have a clear political aim, establish and maintain a free, independent and united country, which is politically and economically stable and viable. An insurgent movement is clearly a war for the people. It, therefore, stands to reason that government measures must be directed to restoring the governing authority and law and order throughout the country so that control over the population can be retained and its support won.

(2) Rule of Law:—The government must function in accordance with law. There is a strong temptation to the government forces, while dealing with terrorism and with guerrilla actions, to act outside the law . . . the excuse being that the process of law is so cumbersome . . . that the normal safeguards in the law for individual are not designed for an insurgency and that a terrorist deserves to be treated as an outlaw anyway. Not only this is normally wrong, but, over a period, it is bound to create more practical difficulties for the government. This leads to a situation in which officers and officials cease to be responsible for their actions. The result is that, instead of an insurgency, there is, to all intents and purposes, a civil war in the country in which neither side can claim to be the government.

(3) Overall Plan:—The government must have an overall plan. This plan must cover, not just the security measures and military operations. It must also include all political, social, economic, administrative, police and other measures which have a bearing on the insurgency. Above all, it must clearly define roles and responsibilities to

avoid duplication of effort and ensure that there are no gaps in the government's field of action. It is essential too, that there should be a proper balance between the military and civil effort, with a complete co-ordination in all fields. **The Main Aim:**—The government must give priority to defeating the political subversion, not the guerrillas. This must obviously be the case in the build up stage before the insurgency starts. This must be the case, despite the fact that it would hold equally good during the insurgency stage. Unless the insurgent's political organisations in the towns and villages are broken and eliminated, the insurgents and guerrilla units will not be defeated. If the guerrillas can be isolated from the population i.e. the little sides removed from the water, then their eventual destruction would become automatic. **(5) The Base Areas:**—In the guerrilla phase of an insurgency, the government must secure its base areas first. The principle to a large extent should be to reverse in the build up phase, before the open insurgency starts. Considerable attention during this phase should be paid to security and economic measures in the remote rural areas. If, however, such preventive action fails, priority in respect of security measures should be given to the more highly developed areas. These would contain the greatest number of population and would be more vital to the government from the point of view of its communications and the economy of the country. Besides, more highly developed areas of the country would be easier to secure and control and the government will, therefore, start the campaign with greater success. This will also instill confidence, which would be the most important ingredient for further success. **Intelligence:**—If subversion is the main threat, starting as it does, well before an open insurgency, and continuing through it and even afterwards, it follows that within the Government, the intelligence organisation is of paramount importance. In fact, no government can hope to defeat an insurgent movement unless it gives top priority to intelligence and is successful in building up such an organisation. . .

WITH THE COMPLIMENTS OF :

Phone : 370156

NAGARDAS KANJI SHAH

STOCKISTS & IMPORTERS OF :

SEAMLESS TUBES, BOILER TUBES

HYDRAULIC PIPES, E.R.W. PIPES.

176, MAGAZINE ST, DARUKHANA MAZAGAON, BOMBAY-10.

SIMPSON'S VIEW POINT

ACCORDING to Howard R. Simpson of the United States; 'From the days of the clash of Roman Legions with the wild tribes of Gaul, to the quick and deadly ambushes of the Vietnam conflict, there has been one constant... the great... difficulty experienced by the regular forces. It has been lack of understanding of the exact nature and character of guerrilla warfare and correct reaction to guerrilla warfare when it is imposed upon them. Centuries have rolled by and regular armed forces have seen scores of commitments against the guerrillas. However, it has still not been fully realised by the established authority and the armed forces operating under their command that 'Revolutionary Wars' have all out emphasis on political action and subversion and this alone has made the task of the counter-insurgent the most difficult ever in history. True it is that, in recent years armies have been retrained and re-equipped to meet the counter-guerrilla requirements, regulars have been constantly lectured on the ways of the guerrillas and how to meet them, special courses with the benefits of technological data gathering have also been held. Results have fallen short. The process still continues and the results may still not be equal to the desired goals in future. However, in the context of these limitations, it would be worthwhile to observe certain fundamental points when committed to counter-insurgency warfare. The more important of these points would be;

(a) In a modern guerrilla warfare, the professional soldier inevitably finds himself up against an enemy whose every move and tactic is co-ordinated with political objectives and plans. The traditional procedure of winning a battle or war against an enemy and then turning the victory over to the politicians and diplomats at once becomes obsolete in this context. (b) The guerrilla tactics always call for constant politico-military actions. The counter-guerrilla commander who may ignore this rule may win militarily only to find that his victory has been annulled by the political triumph of the guerrillas. (c) Traditionally, the professional regular is more inclined and tempted to under-estimate the guerrilla. To him, guerrilla does not appear to impress as a real soldier because he does not fight according to the book. The professional military officer who finds himself suddenly projected into the role of counter-guerrilla commander, without adequate training and preparation, would soon begin to suffer from frustrations common to this type of war. His massive powerful force, designed and trained to carry out large conventional operations will soon become a liability until it is reorganised and trained for the new task. (d) Nationalism, traditions, ethnic ties, historical precedents, political attitudes and the general psychological state of a people determine its basic conduct within or on the fringes of guerrilla warfare. If the people are the water in which guerrilla fish must swim, it is no less true that that the counter-guerrilla must bait and cast his line in the same water for a catch of prime importance. . . . Intelligence. (e) Troops behaviour can be as important to the counter-guerrilla commander as any programme of civic action in reaching the people. The more wide spread the guerrilla movement, the most the more difficult and frustrating are the daily operations for the individual counter-guerrilla. The hunt drags on through tortuous terrain, under conditions of extreme physical hardship, with the sniper or the mine taking a daily toll in dead and wounded. The desire to strike back at the guerrilla becomes overwhelming and the result of such a fixation ranges from complete destruction of villages to unwarranted beatings and useless arrests. Thus the counter-guerrilla bait becomes tainted, his useless and his book floats unheeded in an empty sea.

The prime benefit that an effective counter-guerrilla force can offer to the population is security. With guaranteed security, the people become more willing to come forward with information. However, it has to be understood that security is much more complicated than throwing a temporary ring of riflemen around villages. Populations involved in guerrilla war situations want true security... security not only against raids and exhortations by the guerrillas, but also against mistreatment by the government forces and the armed bands that often proliferate on the fringes of an insurgency. (g) As in purely military aspect of guerrilla operations, new methods have to be developed to meet the changing situations when dealing with the population. The diverse nature of guerrilla war calls for extreme flexibility on the part of the counter-guerrilla. He has to think like the enemy, have an understanding of the enemy problems and psychological attitudes and be gifted with an inordinate amount of patience. The most essential quality to the makeup of a competent counter-guerrilla force and its leaders is patience. (i) As at present, there is perhaps no entity quite so vulnerable to guerrilla action as the modern city. It may not be easy to imagine what a well co-ordinated violent action could mean in terms of utilities destroyed, communications disrupted, administrative service paralysed and civilians terrorized, wounded and killed. True it is that, in an urban atmosphere the guerrilla, like a chameleon, has to undergo several changes to fit into his new environment. Also, he has to face a far more subtle and complicated set of psychological pressures than his counter-part operating from a mountain or a jungle base. However, the work of the counter-guerrilla also becomes highly complicated in urban operations. He has to move and fight in a jungle of property.



WITH THE COMPLIMENTS OF

INDAL

Indian Aluminium Company, Limited

1 MIDDLETON STREET, CALCUTTA 16

JULIAN PAGET'S VIEW POINT

WRITING on 'Fighting the Insurgents', Col. Julian Paget of Great Britain has observed, 'The first essential in any counter insurgency is that the political and the military aims should be agreed by all concerned from the very start and should be clearly stated in a directive. As the military aim is dependent on political considerations, it is essential that the political directive should clearly state these points . . . the purpose and scope of military operations the short term political and military aims of the governing campaign and finally the long term political aim which it is hoped to achieve.

FUNDAMENTAL REQUIREMENTS:—All counter-insurgency forces have certain essential requirements, in the same way as the insurgents have. These requirements are; **(A) Civil And Military Understanding:**—Civil government and military operations must be part of one plan against a common enemy. There is no purely military battlefield in counter insurgency warfare and the campaign can be won only by combined civil and military efforts. There are three essential circumstances under which this understanding can be achieved. They are:— (a) The government must in the very initial stage declare its national policy and at the same define the military role in that policy, (b) A unified command, with the direction and control of the campaign in the hands of one person, must be established. Only in this way can complete mutual confidence be ensured and a firm control of the campaign maintained. (c) There must be closest possible co-ordination between the Armed Forces, the Police, the Government departments and the intelligence organisation, both civil and military. Above all there must be one effective machinery to ensure full consultation and co-ordination between civil and military during the campaign so that the decisions taken are swiftly and effectively implemented. **(B) Command and Control:**—In any counter-insurgency campaign, a special command and control structure is required, in view of the many authorities involved and the problems of proper co-ordination. This, however, must be without prejudice to the fundamental fact that military operations are always subject to political considerations. **(C) Good Intelligence:**—Counter-insurgency intelligence must cover a wide field and deal, not only with the operation, organisation and capabilities of the insurgents, but must try also to expose and to understand their minds, their mentality and their motives. The influence that they are likely to exert over the populace must also be anticipated so that their efforts at subversion and intimidation can be thwarted. The organisation of intelligence during a counter-insurgency campaign generally follows three phases; (a) Leading upto the outbreak of operations by the Security Forces, (b) With the insurgents going underground and the Armed Forces beginning their operations. (c) With the populace deciding to co-operate and giving intelligence against the insurgents or else when the security forces have gained enough information from their own sources to be able to penetrate and so break up the insurgent organisation. This moment is like reaching the top of a hill, for once the enemy are evidently on the run, information usually snowballs and it is much easier journey down the other side of the hill. **(D) Mobility:**—In order to tackle any insurgency early and prevent it from spreading, there is a need for strategic mobility, so that appropriate force can be sent to the scene of fighting without delay and can go into action immediately after arrival. On arrival, the force must have local mobility. One lesson of every emergency to date has been the value of mobile and aggressive patrolling and ability to penetrate deep into the guerrilla territory and then employ guerrilla

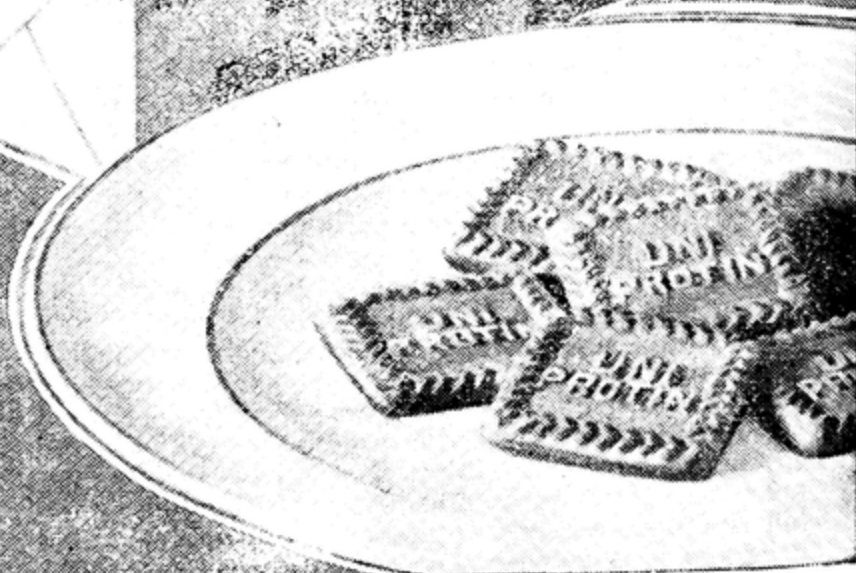
CRISPY BRISKY WAY TO PROTEINS UNI-PROTIN BRISKIES



**DELICIOUS
HIGH PROTEIN
VITAMINISED
BISCUITS**

3 times superior
protein as
compared to
common biscuits.

Fortified with
Iron & Calcium.



Manufactured by:
UNICHEM LABORATORIES LTD.,
BOMBAY 60 GHAZIABAD

Sole Distributors:
UNI DISTRIBUTORS PVT. LTD.,
BOMBAY 26

tactics against them. **(E) Training:**—Counter-insurgency warfare is highly specialised subject, calling for continual study and practice. To be fully effective, training has to be carried out jointly by all those directly concerned, both with civil and military. This would apply to planning staff work just as much as to operational techniques. Training has to include a thorough knowledge of the probable enemy, his methods and his weaknesses, as well as a study of the civil aspects of cold war campaigning, so that all ranks understand the problems of civil authorities and appreciate their aims. **OPERATIONAL TECHNIQUES:**—Insurgents cannot be defeated by conventional warfare techniques. A completely fresh approach is required. The most difficult task in counter-insurgency warfare is to make contact with the insurgents and kill them in battle. This requires a totally disproportionate effort for every insurgent eliminated in this way and this is a lengthy and laborious process. The better method is to make it impossible for the insurgents to fight and this can be done by depriving the insurgents of those essentials on which they depend to survive. Following would be the essentials to be denied to the insurgents:—

Support of the Population:—The population of any country suffering an insurgency will normally fall into four categories . . . active willing supporters of the insurgents, active loyalists, those who give their support to the insurgents only out of fear of the consequences and those who are not subject to intimidation but who nevertheless sit firmly on the fence, waiting to see which side it would be best for them to jump in due course. The aim of the government must be to persuade or to force the last two categories to cease supporting the insurgents and to transfer their loyalty to the government. The methods to be used must be based on the 'carrot and stick' technique and they must be used with great skill and subtlety. **Bases:**—Guerrillas invariably need bases from which to operate and organise and control their movement. Just as a diver attacked by an octopus will attack the beast's head rather than try to cut off each tentacle, similarly the counter insurgent forces have to make the enemy bases their first priority target in preference to pursuing individual gangs. Operations against the insurgent bases invariably depend on good intelligence. They are, therefore, successful only in the later stages of a campaign. Where insurgent bases are deliberately set up astride an international border, special political action would be needed. **Mobility:**—The basic principle for guerrilla forces is to avoid set-piece battles and to rely on harrassing, hit and run tactics. It is, therefore, greatly to the advantage of the counter-insurgency forces, if they can deprive the guerrilla of their freedom of movement and thereby the ability to strike. To achieve this would require a combination of defensive and offensive measures. **Supplies and Information:**—Guerrillas depend on the local population for their supplies and information. It must be the task of the counter-insurgency forces to deny to the guerrillas these vital sources and resources. This can be done by tightening security measures so that no information can pass to the guerrillas. **The will to win:**—In an insurgent campaign, each side is constantly trying to undermine and destroy its opponent's will to fight on. It is because success in that direction means victory and it can be one of the easiest and cheapest methods of winning the war. The morale and will to win of any insurgent force depends on having a stirring and convincing cause for which to fight, and also a belief that they are on the winning side. It would therefore be the task of the counter-insurgent forces to weaken and neutralise the cause of the guerrillas and shake their will and determination to fight.



Do we dare match nature?

Indeed no. But then, ours is a different role. We make synthetic yarns, for textiles and other industries. Providing much needed substitution for nature's own fibres.

Nirlon

Nylon Filament Yarn

Nirester

Polyester Filament Yarn

nirkord

Nylon Tyre Cord

Products of

NIRLON SYNTHETIC FIBRES & CHEMICALS LTD.

115, Mahatma Gandhi Road, Bombay-1

CHAPTER VII

AIR POWER

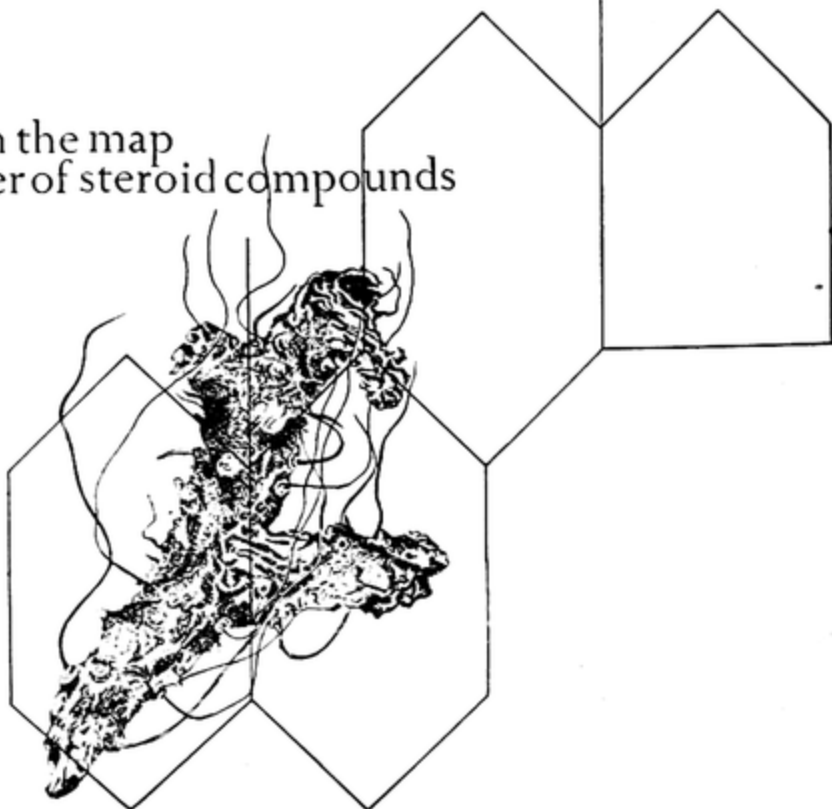
.. MEANING AND PURPOSE.

LIGHTER THAN AIR craft was born at the hands of Wright Brothers of the United States of America. Immediately, the military potential of this revolutionary device was neither visualised nor realised even by the most thoughtful military planners. However, when it became a military weapon and was developed into regular, independent arm of Services, it was given the name of 'Air Power'. In the initial stages, air power was defined as the total ability of a nation or a group of nations (allies) to fly, to act through the air space and to use controlled flight for the purposes of war. In this context, air power included a nation's (or a group of nations) ability to deliver cargo, destructive war materials and other elements of war-making potential through the medium of air to a desired destination and accomplish desired mission. However, soon a narrow and strictly military meaning was given to this broad definition. In this context, air power was defined as the total ability of a nation to assert its military will via the medium of the air. The military instrument for the assertion of this will was the air force, which in time of peace was to be used to implement national policies and in time of war, to establish command of the air... the condition in which the initiating power retained its freedom of navigation and denied the same to the enemy.

Untill the close of World War II, air power was the exclusive possession of a few European powers, the United States of America and the Soviet Union. However, in the post-war years, air power has become an essential and integral part of the military machines of all the countries which were earlier under the imperialist heels and had no sovereign status of their own. Although 'unmanned craft' like rockets, missiles constitute the strategic forces of the United States of America and the Soviet Union, the air forces of all other countries are the manned aircraft. In the post-war years, the manned aircraft has played its part in all the local and limited conflicts and has retained its pride of place in the weapons systems of the world as the decisive war winning factor. What-ever the emphasis on the strategic nuclear forces in the military machines of the United States of America and the Soviet Union, manned aircraft, it appears, will continue to have its own peculiar importance for many, many years to come.

Wyeth helps Develop the Rich Potential of India's Natural Resources—

And puts India on the map
as a world supplier of steroid compounds



Wyeth's modern steroid plant processes the basic raw materials for steroids out of the *Dioscorea deltoidea* root, the humble yam that grows wild in the Himalayan foothills. Provides the basis for a wide variety of new drugs—from the widely used corticosteroids to an effective new minimumcontraceptive pill.



WYETH LABORATORIES LTD., BOMBAY.

IMPACT ON WAR:—Effective from the very hour of its conversion into a military weapon system, air power brought about a whole-sale revolution in the nature, character, extent and intensity of war. With immediate effect, with the touch of a magic wand, it may be said, warfare became truly **unlimited and three dimensional**. It no longer involved the clash of armies and navies in the old and traditional manner, restricted and confined to what were known as the 'firing lines' or the 'battle zones'. Air power carried it to the entire surface of the earth. Racing across the endless reaches of the sky, aircraft demonstrated the capabilities of encompassing into the orbit of active military operations, areas miles and miles behind the firing lines or the battle zones and carrying the ravages of war to combatants and non-combatants alike. With the air weapons included into the military machines of the warring nations, the entire globe was shrunk into one single operational theatre and elements of surprise, mobility manoeuvre and strike and fire power were given entirely new meaning and purpose. Whatever the significance and importance of armies and navies still, war in essence became air war only.

AIR SPACE:—Until the advent of the aircraft, the sovereignty of nations was restricted to the landmass inhabited by them and under their effective socio-political control. Although warships and submarines had carried the war to the high seas and below the surface of the high seas, no attempt was made by the warring nations to project their sovereignty to the high seas. This, however, was not the case with the air space. With the aircraft becoming operational in the military way, the sovereignty of the warring nations was extended to the air space over their national territories and no military aircraft could cross into other territories without mutual and reciprocal agreements and treaties. In the absence of such agreements or treaties, the intrusion of aircraft constituted an act of hostility... a 'violation' of the air-space... and could as such be intercepted and shot even in peace time. In the time of war, any massive intrusion was given the name of air invasion and all nations had the right of fighting back this invasion as they would in the case of land forces.

COMMAND OF THE AIR:—Basic and fundamental to all air operations in war has been and continues to be, what has since been known as **the command of the air**. In the conventional and traditional sense, by command of the air is meant 'being in a position to gain and retain the uninterrupted ability to fly and deliver destructive war materials at the desired targets and to deny the same capability to the enemy'. In order to ensure national defence which is essential before land, sea or even air operations can start without being subjected to unacceptable punishment and damage, it is considered absolutely necessary to establish and maintain the command of the air. There are no set and rigid rules which can enable the warring nations to establish and maintain the command of the air in time of war because the whole process is dependent upon existing, emerging and developing elements of force and vulnerabilities. However, command of the air can generally be established and maintained by any one or in combination of the following methods.

(a) Possessions of numerical strength of the military aircraft, their speed, range, pay load capacity and operational excellence of the crew. (b) Create such an air defence blanket around national and friendly areas as would not permit enemy aircraft to penetrate and achieve any degree of offensive operational effectiveness. (c) Carry the air war into the heartland of the enemy and by effective operations over his territory, destroy his aircraft, on the ground in the

first instance and then in the air, if they are able to take off and join the battledestroy his means of production and communication and neutralise his air bases and supporting facilities. (d) Maintain the battle without any interference by the enemy as this alone would permit the commanders to build up their supplies and reinforcements necessary for the continuation of the battle without permitting any strategical and tactical advantages to operate in favour of the enemy. (e) Prevent the enemy from maintaining the battle and thereby render him unable to build up adequate supplies for his forces on land, on the high seas and in the air. All these measures, in conjunction with other realities and peculiarities of the situation, will alone bring about the total elimination of the enemy sources of air power capabilities. . . .his aircraft, his factories, air supply depots, pilot training centres and everything else which goes to constitute his usable air power located deep in the heartland of his territory.

CHARACTERISTICS OF AIR POWER:—The military realities of today have placed the highest premium on the peculiar characteristics of air forces. In order that air forces can play their rightful role in the achievement of national objectives in a modern war, they must have the following characteristics which combine in themselves the most effective and also the most economical means of applying military forces against the enemy.

Range:—Operating air forces must be able to reach out and hit the enemy forces wherever on earth or in the air they may be. Weapon delivery systems, therefore, must have sufficient range to do this job. Systems that have been coming into being have all along stressed this factor, both in terms of terrestrial geography and of space. (b) **Mobility:**—By mobility is meant that selected forces must be able to move out safely. . . .on extremely short notice and operate in new locations without permitting the enemy forces to take up defensive positions. Mobility, in another and, perhaps, in broader, sense means the ability to cover one hundred per cent of the surface of the earth without the restrictions of geography or political boundaries. It is this 'get up and go' quality that characterises is shown up in a combination of manned and unmanned weapons and the means of using them together. Flexibility is revealed in air forces in their capacity to react instantaneously, accurately and reliably to meet varying demands for air forces to be used by themselves or in combination with other services, with precisely the necessary amount of effectiveness required by the nature and character of war. From dispersed basis around the perimeter of enemy territory, elements of air power must be able to concentrate on targets that cannot be reached by an other military means. **Speed:**—This simply that forces must be able to hit targets anywhere in the world within hours or minutes and thereby compress the time scale and span of decisions. This also means that, there are no agonising delays in the redeployment of forces from one theatre to another. This ability to reach quickly is essential to gain decisions in battle. **Penetrative Ability:**—By this is meant the ability to penetrate the enemy territory despite the enemy defensive measures and carry out the assigned missions. Three things contribute to the penetrative ability of the operating air forces. In the first instance, there is the three dimensional medium of the air space itself in which these forces operate. This is the total expanse of that indivisible operational medium beyond the surface of the earth. This medium can be exploited in many ways. Secondly, there is the ability of the air forces to operate in this medium at whatever speed and altitude required. Thirdly, there is the ability of the air forces to use a wide variety of tactics, singly or in combination, both in manned and unmanned operations. Penetrative ability

then adds up to the simple fact that air forces can get through natural or defensive barriers and deliver their destructive fire power or accomplish any other military mission assigned to them. **Volume of Fire Power:**—By volume of fire power, which must be overwhelming, is meant the capacity to place weapons on targets with the necessary accuracy required. By this is also meant the high rate or launch and the ability to use the maximum power weapons possible under the circumstances. It is in these systems that the air forces must excell.

AIRCRAFT TYPE... BIRTH CRITERIA:—Air power cannot perform its combat duties unless the new types are brought into existence to meet the changing demands. It is on account of this vital necessity that the growing air forces of the world have seen a bewildering generation of new aircraft coming into existence. It has been conceded that the process by which the new aircraft are developed and launched is extremely complex. It involves the professional knowledge, work and intuitive judgement of top experts. It has further been conceded that every new generation of aircraft is brought into the overall inventories in accordance with a general plan and in response to specific requirements. As a matter of process, the general procedure for the new generation of aircraft requirements begins with **the recognition of the need for a follow on or the new aircraft** in being. The origin of this **requirement** stems from a continuous evaluation of the current systems and their capabilities, the nature, character, extent and intensity of the new threats, technological progress and the mission characteristics. **Concept formulation** is always an essential pre-requisite of what the new aircraft must be...how fast they would go, what would be their pay load etc. These and other performance parameters are most carefully established. Apart and aside of this, most careful consideration is given to the **nature and character of the enemy threat**. Task force stand off distances, mission profiles and a number of other factors also enter into the analysis. The derivation of these and other factors result in a **statement of performance of factors** laid out in a logical order. Among other operational factors which are also taken into consideration, the most important is the **vulnerability factor**. This is based on attrition experienced by various types of aircraft becoming available. The whole problem of reducing aircraft vulnerability is a complex one. It is a process of lessons derived from one context being applied to improve survivability in future. Aircraft vulnerability can be reduced by several ways other than adding armour plating. Avionic

SPECIALISTS OF ASBESTOS PACKINGS

●
SURENDRA TRADING CO.,

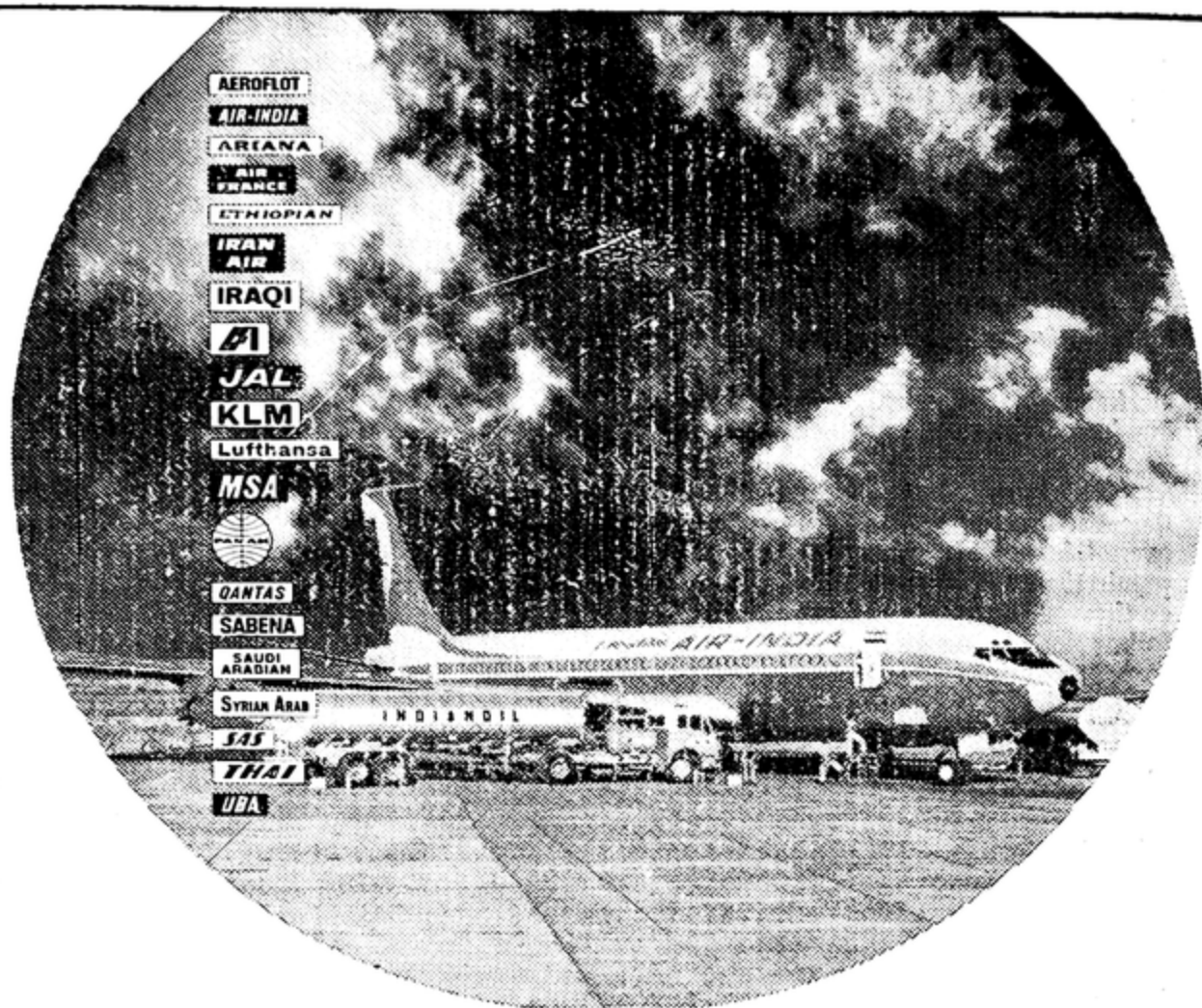
129, Narayan Dhuru Street, BOMBAY-3.

Mill Gin Store Suppliers & Hardware Merchants

Phone : 326615

IMPORTERS & STOCKISTS OF :

Asbestos Mill boards Jointing & Packings Vulcanised Fibre Sheets & Rods, Rubber & Leather Beltings, Commercial, Steam & Syntethic Rubber & Insertions, Belt Fasteners, Acid & Alkali Resisting Packings & Asbestos Magnesia 85% Powder, etc.



KEEPING A NATION ON THE MOVE



*a national trust
for economic prosperity*

As many as 20 airlines of international repute avail of INDIANOIL's expert refuelling service. In the growth of India's transport and communications, INDIANOIL has been playing a distinct role. But that is not to belittle its contribution to the nation's agriculture and industry.

In a short span of a decade, INDIANOIL has emerged as the biggest oil refining and marketing organisation in India—meeting more than half of the nation's total requirements of petroleum products.

With a chain of refineries processing indigenous crude, a vast pipeline transportation system, and a countrywide storage and distribution network, INDIANOIL has ensured an uninterrupted flow of oil for India's defence and development.

As part of the nation's planned development INDIANOIL ceaselessly strives to take the country towards self-reliance and self-sufficiency in petroleum.

**INDIAN OIL
CORPORATION
LIMITED**

devices, attention to reduced size and cross section control of infra-red emissions, mechanical designs, including the number of engines, addition of redundant control system and the shielding of vital components behind less vital ones are the most important of such ways. The consideration of **aircraft maintainability** has also to receive maximum consideration. The growing complexities of aircraft and weapons systems has caused must greater attention to be paid to improved accessibility of components and maintenance factors. It is conceded that many of the features which improve accessibility of components and simplicity on servicing are not conducive to the achievement of the minimum aircraft vulnerability. So here again, trade offs are most closely examined to ensure the best compromise.

— **TASK OF AIR POWER:**—The foremost task of any air power, in a conflict, whatever, its nature, character, extent and intensity, is to safeguard friendly forces, supporting installations and power centres and its own self from the enemy air attacks and fight to the total elimination of the enemy fighting capabilities. Air and surface forces, when committed to action in a theatre of operations, are charged with the accomplishing of these tasks within their inherent capabilities. The security of the theatre of operations, its geography, its people and its military forces, is the responsibility of both air and surface forces. Air forces provide security from air attacks by the destruction of the enemy air forces and with impenetrable invulnerable air defences. If the situation permits, or the strategy is properly designed, air forces also provide strategic security to the theatre of operations. This security comes from the decisive destruction and disorganisation of the approaching enemy armies before they engage the friendly ground forces in a climatic action. The effectiveness of such air action is directly proportional to time, space and fire power available for air attacks.

TWO BATTLES:—Air power has two battles to fight. In the first instance, it has to beat the enemy in the air and only thereafter turn to intervene in the land-sea fighting. Air power, therefore, has first to secure air dominance, provide protection to national and friendly ground and surface forces and then assist them in their free operations. In other words, the first essential task of air power is air defence. It is only when **air defence** is established... only when fighter protection is secured for the air bases, for land and surface forces and for the sources and centres of production and other supporting elements... that air arm can turn to the offensive. Clearly, offensive arm of air power is useless until the fighter has cleared the air and is in a position to put a guarding fighter screen.

MISSIONS AND OPERATIONS:—With reference to ground targets, the destructive power of air power is its bombardment and attack aviation. Earlier, bombers were generally employed on strategic missions against large and important targets located deep in the heartland of the enemy territory. Where the objective was to inflict massive and widespread damage, attack aircraft were generally employed on tactical missions in support of the ground troops, against enemy tanks and transportation engaged in supplying battle ground forces and supply installations in the enemy's combat areas which supported his armies in the field. Attack aviation was also employed in special operations against strategic points which could be most effectively attacked from low altitudes by

small fast flying planes. When bombers were employed on long range missions, against important targets in the enemy's heartland, they generally flew in large formations at very high altitudes in order to be beyond the effective anti-aircraft fire range. They were also accompanied by fighter aircraft for defence against intercept aircraft. When the missions required precision bombing, attacks were generally carried out during daylight hours. When, however, the missions involved saturation bombing of an area, operations were generally conducted during hours of darkness. In either case, the objective sought was to inflict the very maximum damage possible under the circumstances. Until recently, multimission aircraft capable of performing both fighter and attack roles in all weather and terrain conditions and in day light and hours of darkness were not considered achievable. This seemingly impossible task has since been accomplished. Multimission aircraft have now grown to dominate all the air forces of the world and air operations are no longer subject to earlier limitations. Although the context to the earlier missions has remained unaltered, the weapon system have changed beyond recognition.

DEPLOYMENT:—Never an easy task even before, deployment of air forces in battle has become an extremely complicated process. This complications have stemmed from the fact that, in air warfare, sharp delineation of objectives is critical on account of the mobility and fire power of modern air forces which has opened up many opportunities for their offensive employment. At the same time, the nature of the enemy and the immediate and secondary threats that he may pose to national and friendly forces, demand action that may distract full commitment of ones' own forces. Opportunities and vulnerabilities, capabilities and war objectives; therefore, govern the strategy of the deployment of air forces. The determination of the relative vulnerability of the various segments of the enemy structure is a process of weighing probable effects against capabilities to inflict damage. In the presence of the enemy air, land and sea forces, national and friendly air forces may be employed against the personnel and organic equipment of the enemy. This may be done simultaneously, or in turn, according to the immediacy and intensity of threats that they may pose to the capabilities of the national and friendly air forces. Further, there would be battle areas, supplies, communication and control systems, common to two or more of the enemy forces, which may be destroyed or interdicted. Finally, there would be national, industrial, social and political control systems that may be destroyed. Finally, the cumulative effects of these combined actions may be exploited, in conjunction with propaganda, to obtain desirable psychological effects.

ELEMENTS OF AIR POWER (GENERAL):—According to Asher Lee, 'Air power is, after all, conditioned by the number of high grade machines and crew and the amount of modern equipment available to accomplish the missions assigned. It depends on weather, enemy strength, enemy intelligence and a host of other unpredictable factors.' According to John C. Cooper, another noted US scholar in the field of aviation and aviation literature; 'The elements of aviation capacity to fly are of two kinds...those that determine its present usable national air power and those additional elements which measure its potential air power over a long period. The former are the visible and acquired national assets, while the later are those underlying factors which make possible the continued existence of air power over a long period. The later include, geographical conditions, resources, characteristics of the population,

standard of industrial development and governmental policies. Of the long range factors, which govern the growth and decline of air power, none is more important than the attitude of the government which has the responsibility of directing national activities.'

..ELEMENTS OF AIR POWER (FUNCTIONAL):—Air power has three distinct functional elements... each having a sphere of its own activity but capable of merging into a joint activity any time circumstances demand. These elements are military, civil and industrial.

MILITARY ELEMENTS:—Functionally the military elements of air power perform two basic roles...the combat role and the supporting and logistic role. The combat role consists of two tasks...the strategic offensive task and the air defence task. No matter how the air arms are organised (and air organisations change with a fair degree of frequency), these tasks have to be performed if the military air has to do its job. Together, these tasks make the fundamental air missions of imposing the maximum destruction of the enemy war-making capacity. Military air operations also fall into two categories **Strategic Air Operations and Tactical Air Operations.** Strategic Air Operations are the activities directed against enemy targets independent of the surface effort. Tactical Air Operations are those conducted in direct support of the surface (land or sea) effort. These terms are necessarily broad, but a vast majority of air operations are classified under one of them.

STRATEGIC AIR OFFENSIVE TASK:—In the Strategic Air Offensive Task, force is concentrated in the atomic mailed fist that is the core of modern Air Power. Strategic Air Forces are used primarily against the material fountain heads of the enemy war-making capacity. Owing to the location of the targets, relative to the surface areas of the battle, the operations of the strategic air forces are generally independent of army or naval operations. In order that the strategic air forces can successfully carry out the mission of inflicting punishment unacceptable to the enemy, they must have the ranges necessary for the task, the ability to accomplish the attack missions after reaching the target areas and the means to protect themselves from enemy attack while en route and in action. In other words, they must combine in themselves the characteristics of speed, range, armament payload and the capability to hit the target, despite all the defensive measures by the enemy.

The choice of strategic bombing targets is always deeply affected by enemy defences, target priorities and by the state of intelligence of the enemy. Weather has long since ceased to be vital factor that it used to be. Radar bombing aids have since improved very greatly. In consequence, heavy and devastating pin-point bombing in clear visibility have become relatively less important. With the atomic bombs, and later hydrogen bombs, (and now with rockets and missiles) area bombing has come into its own. So much so that it, has become doubtful that long-range bombing of civilian population and military targets can ever be really separated in the future, at any rate, at the policy level

Whatever its significance and importance otherwise, air warfare theoreticians have since conceded that the entire concept...not only of Strategic Air Offensive Task, but of Air Power itself, has undergone a revolutionary change

WE

SALUTE OUR GALLANT
ARMED FORCES

AND

REDEDICATE OURSELVES
TO KEEPING THEM IN
FIGHTING TRIM FOR
OUR NATIONAL IDEALS

●
FREEDOM - DEMOCRACY
SECULARISM - SOCIALISM
●



INDAMER COMPANY PRIVATE LIMITED

HANGAR NO. - 1., JUHU AIRPORT
BOMBAY - 54.

- **Aircraft Sales & Service**
- **Aircraft & Aircraft Engine
Overhauls**
- **Accessories, Spare parts,
Navigation Eqpt.**

Tel. : 531331 & 534083

Grams : **ALBALDINI (SZ)**



with the invention of the missile armed with nuclear warhead. Until the advent of the missile, the proponents of Air Power had maintained that if a nation had enough aircraft armed with powerful explosives, the Air Power could itself be decisive. This theory lingered on even when the atomic bombs were dropped on Japan and still later when the development of the infinitely more powerful Hydrogen Bomb seemed at least to bring Air Power to its own, with the aircraft as the final arbitrator in war, capable of defeating the most powerful country by means of a devastating nuclear offensive. The advent of missile has since changed the concept for two fundamental reasons: (a) The development of the anti-aircraft missile together with sophisticated warning and control system, has proceeded at such a pace that aircraft can no longer penetrate the enemy defence system with the ease and effectiveness that they could do earlier. Under the circumstances, aircraft can no longer provide a viable means of delivery for a strategic nuclear offensive against full-scale modern defences. (b) The inter-continental ballistic missile, armed with a nuclear warhead, has emerged to progressively replace the strategic bomber. Even if the bomber can still claim to have some limited penetrative ability, it has become increasingly superfluous because of the much greater penetrative ability of the missile.

TACTICAL OFFENSIVE TASK:—Primary function of the Tactical Air Force is to defeat the enemy action by decisive application of its versatile firepower and large radius of action. For its mission customarily established in co-operation with friendly ground and surface forces, the specialised task of Tactical Air Forces is to control the air, vital to the battle area and to exploit the control by interdiction of communications and movement and by the destruction of enemy forces and their support elements. The Tactical Air Forces also augment the strategic defence of the areas abroad into which their elements are deployed. In a general war, they join the strategic offensive. Operating from their forward stations, they take out assigned portions of the enemy war-making capabilities. In a limited war, these elements, already deployed, hold their positions of guard against spreading the war. With many diverse missions to perform, Tactical Air Force must have versatile capabilities. It must be able to operate regardless of the weather and other barriers.

The provision of air support for the ground battles of an army has changed its bases more often than any other department of Air Power during the post-war years. In the First World War, air operations in support of army were almost entirely confined to reconnaissance. Later during the war, the techniques of ground strafing and bombing troops emerged slowly in a primitive form. There were no fleets of transport machines to fetch and carry wounded men or vital supplies or to air-drop troops in an emergency. Nor were there, forces of strategic bombers to threaten or destroy enemy lines of communications sufficiently to slow up reinforcement crucially. Between the two wars, the major functions of Air Power were keenly debated by military strategist. Unlike England and America, Russia, Germany and Japan, looked upon air power mainly as a military instrument to serve the immediate tactical needs of the Army and Navy. Whatever the progress in this particular regard in Russia and Japan, it was Luftwaffe of Germany which first realised a plan to make Tactical Air Power fully mobile to meet the needs of the lightning advances which could be made by modern armoured forces, supported by lorried infantry and fast moving artillery. In the early post-war years, there were a number of armament and aircraft developments to suggest that the nature of the tactical air warfare would

be much altered in future. Early in 1952, the United States Air Force activated the first known squadrons of tactical pilotless aircraft. These aircraft which were in fact guided missiles were revolutionary weapons which could be launched and guided to their targets by ground control, both by day and night. Their crew were not airmen strictly but ground tacticians who assembled this grounded missile, checked it, calibrated its electronic equipment and then launched and guided it to the target to which it could fly at supersonic speeds. There was one development of tactical air support which was little used in World War II or in Korea. This development came with the single intruder plane to harass the enemy movement and communications at night or in bad weather. The next stage of revolutionary development in the matter of tactical support to the ground and surface forces came with the dawn of atomic power. In the initial stages, the cautious approach to their employment was dictated by the fact that the enormous expense of making these weapons made careful planning of their use under army auspices, a vital necessity. This later became more vital because Army reconnaissance aircraft had to be flown by pilots, who, if not the members of the ground formations, had at any rate, to be well versed in their needs. Further, the use of tactical atomic weapons required spotting of the atomic artillery of the highest quality. Selection of targets for tactical atomic bombers called for very special care in reconnaissance, target intelligence, routing and escort and use of radio counter-measures, which had till then been mainly associated with strategic bombing. The combination, of atomic shells, guided missiles and helicopter reconnaissance units meant that the tactical support of the army no longer called for building of emergency airstrips and airfields and flying large ground staffs, to the forward air bases. Loads and ordinary fields could replace air bases. And this has not been the 'finale' to further breakthroughs in the operational techniques and capabilities of the Tactical Air Forces (See also 'Post-War Air Forces').

AIR DEFENCE TASK:—Air defence task is just what its name implies 'active and assertive air protection of the areas, installations and forces that are considered vital to national defence'. Total Defence has along been a fatal attitude in warfare. It is indeed infinitely more so in air warfare wherein total defence has not and will not be possible or practicable. Air warfare experts have conceded most readily that, whatever its significance and importance to a people committed to war, the general position of air and ground launched missiles, capable of policing the entire continents... has been and will, perhaps, always remain far beyond the economic and operational capabilities of even the most powerful nation on earth. The main difficulty in this regard has been and will continue to be the continuous drastic reduction in the margin of safety provided by time and distance. While conceding that total air defence has only been and will not be possible in any foreseeable future, air warfare experts have not discarded the defensive as completely useless. On the contrary, they have conceded that, despite the complexity, air defence has many points in its favour. For instance, with an efficient early warning system, it can detect the approaching aircraft in time to counter their attack. Although, bombers have an almost infinite number of routes to high priority targets, they must approach them ultimately and thus expose themselves to counter attack. This defensive attack would not merely be a token effort, because modern air defence weapons have also reached an extremely high level of effectiveness.

As at present, there are two fundamental approaches to air defence. Both are considered equally important and necessary. One is to protect critical areas, installations and forces with an efficient air defence system, and the other is to

build an offensive arm capable of attacking the enemy air forces and their feeder elements right at their sources of origin. This concept has been advanced because there is no adequate solution to the air defence problem. The only certain way for a nation committed to air warfare to stop strategic enemy bombardment is to engage its own forces to strategic bombardment and thus immobilise the enemy forces. This school of thought includes the premise that, if two warring nations have strategic air forces, the first target for each would and must be the other's ability to employ such forces. However, whatever the context, modern defence action, in the context of atomic and hydrogen explosives, rockets and guided missiles, moving at supersonic speeds, must be truly split second and must operate at maximum efficiency in its four basic functions... **getting its information about the enemy, transmitting it to the echelons concerned, taking necessary actions, putting it in a form to help quick decisions to be made and finally allocating, operating and controlling the air defence weapons against the threatened attack.** The system of piloting incoming aircraft by hand, and using the human voice on telephone, invariably meant an unacceptable loss of time and inevitable confusion and inadequacy. As at present, electronic means of collecting and transmitting data information throughout the air defence system has become a paramount necessity. **Actually, there is now the vital need of an electronic brain to be brought into the modern air defence system.**

In their own cautious way, air warfare experts have conceded that whatever the nature, character, scope and extent of air defence system devised, it

WOULD CENTRAL HELP ME TO BE EMPLOYED?



YES! CENTRAL IS AT YOUR SERVICE

WITH ITS SELF-EMPLOYMENT LOAN SCHEME

Central offers practical guidance and liberal loans to artisans, craftsmen, technologists, professionals and others for gainful self-employment.

If you have plans for self-employment, place them before Central Bank.

Call on us today at nearest branch



CENTRAL BANK OF INDIA

Head Office Mahatma Gandhi Road, Bombay-1.

THE BANK THAT MOVES OUT TO PEOPLE AND PLACES

Twins to serve you



**Lucas-TVS
builds quality into
automobile
electrical
equipment,**



**Lucas Indian Service
maintains it.**

LUCAS-TVS LIMITED,
PADI, MADRAS 50
LUCAS INDIAN SERVICE LIMITED,
MADRAS—BOMBAY—CALCUTTA

will suffer from its inherent handicaps. In the first instance, the attacker will always have the initiative. He will also have the choice of time, place and means of attack. Under the circumstances, the biggest problem for defence would be to discover the attack at the earliest possible moment. The effort may never be free from technical difficulties. For instance, the best of radar system may not be able to distinguish friend from foe. It may suffer from susceptibilities to interference and inability to cope with the curvature of the earth. In order to plug the gaps so created, it may become necessary to rigidly control all friendly civilian and military air traffic.... a measure which may not be to the taste and liking of friends and allies, and may actually damage friendship or alliance.

AIR DEFENCE OPERATIONS

AIR defence operations are of two kinds. **Active Air Defence Operations** which are conducted by combat aircraft and **Passive Air Defence operations** which are non-combatant type and are conducted by civilians in conjunction with the combat authority.

ACTIVE AIR DEFENCE:—Fundamentally, **Active Air Defence Operations** are directed to preventing hostile air attacks by destroying the enemy air forces and supporting potential on the ground or in the making. This is the main strategy behind raids on aerodromes, flying fields, aircraft factories, etc. This is the task of **bombardment aviation**. Intelligence in regard to the strength, location, defensive capabilities and take off periods of the enemy aircraft are vital to the success of this type of operations. The next most effective means of preventing hostile air attack is, to intercept the invading forces and destroy them before they come within the striking distance of their objectives. This constitutes the **“outer ring” of the Active Air Defence**. The objective of this type of operation is to subject the invading aircraft to continuous attacks from as far out as possible as they approach their targets. The mission of this type of fire is to disorganise the attacking force by shooting down as many bombers as possible before they reach the bomb release-line or at least to cause them to fly so high and in such irregular paths as to largely nullify effective bombing. Anti-aircraft artillery and guided missiles thus constitute the **minor ring** of the **Active Defence operations**. Basic to all air defence operations is the **Early Warning System**. This indeed is the very first requirement. Although Early Warning System operates primarily as a part of Active Air Defence System, yet it serves to warn civilian communities and industrial establishments of the approach of the hostile aircraft so that they can take appropriate steps for effective **Passive Air Defence**. Thus the system serves both active and passive air defence and is regarded as the most vital connecting link between the two. In order to lengthen the vital interval between the first enemy detection and attack, early warning lines are constructed as far away from the target areas as geographically possible. The same defence in depth concept is also carried out in the family of weapons systems. Early Warning System, to be truly effective, must have the speediest possible communications system. To be of value, the information from the detection system must be assessed, evaluated and transmitted in the speediest manner possible. Further, this information must be processed and displayed within the shortest time limit possible and instructions must be issued rapidly and accurately to enable the field commanders to make continuous estimates of the situations and direct air battles to the greatest good and advantage of the air defence objectives.

PASSIVE AIR DEFENCE:—The three-fold purpose of Passive Air Defence has always been and continues to be: (1) To prevent, as far as possible, casualties among the civilian population from air attacks. (2) To maintain public morale and to ensure the uninterrupted and orderly progress of industries, specially the feeder industries. (3) To limit, as far as humanly possible, the extent of damage to property from air bombardment and thus prevent dislocation of war effort. In order to attain these objectives, it is vital to organise and train the public generally as to the powers and limitations of air attacks, the means and methods of protection against consequences of such attacks and to organise the community so that effective steps can always be taken with maximum ease and efficiency to protect life and property. Organisationally, the Passive Air Defence is the task of **Civil Defence Authority** under whose overall direction and guidance all possible preventive and protective steps are taken. These steps generally are: **Preventive Measures:**—To forestall air attacks, preventive measures which are taken in advance of a war emergency are: (a) Dispersion or removal of vital manufacturing establishments from large cities over as wide an area as possible or moving them underground. (b) Evacuation of population from large industrial areas of non-essential persons to rural areas. Though evacuation is simple in principle, its practical application is attended with many complex problems, the authority has to exercise all the caution possible. (c) Segregation, where factories have to handle explosives, highly inflammable liquids or other hazardous materials. It is considered safer for the establishments as a whole, if these dangerous materials and operations are grouped together and placed at a safe distance from other buildings in the plant and surrounding neighbourhood. (d) **Future Planning of Cities:** Planning and development of urban communities cannot be left to circumstances, but has to be dictated by the principles of dispersion of population and industrial plants and vital public utilities, to place them underground at a depth sufficient to protect them from everything but a direct hit with atomic bombs or the largest H.E. bombs. (e) Concealing important buildings and activities from air observations is one of the most valuable means of protection against air attacks. However, they must be segregated and located at a safe distance from other unconcealed targets. **Protective Measures:**—These are designed to afford protection when attack is made. These measures must be provided before the outbreak of emergency. Broadly speaking, the various ways and means of protecting personnel against air attacks with ABC weapons comprise two general methods... Collective protection of groups of persons and Individual protection of each person. **Control Measures:**—These are put into operation during air attacks to maintain public order and morale and to lessen the severity of the blows. These are generally (a) Control of communications. (b) Control of transportation. (c) Control of damaged areas. **Restorative Measures:**—These are put into operation immediately after an attack to mitigate its injurious effects upon the population and to repair the damage to property. These measures include: (a) Rescue, and first aid of to casualties. (b) Clearance of debris. (c) Repair of damaged utility lines. (d) Decontamination and disinfection and (e) Hospitalisation of casualties. (see also, **Civil Defence**)

SUPPORTING AND LOGISTIC ROLE:—In this role, Air Power has two principle tasks. The first of this may be called the **Non-combatant Task**. Included in this task are the air transport and troops carrying functions as well as air training and test flying missions. The Non-combatant flying operations contribute most significantly to air power. Tactical and strategical mobility is enormously enhanced by range and flexibility of air supply essential equipment. Ground supply too is vastly augmented by the introduction of troop carrier aircraft or

parachute and airborne units. The second task of the supporting or logistic role can be summed up in a single word. **"Materiale" Inherent in the performance** of the 'Materiale Task' are all the details of developing, procuring, testing and supplying the combat units, all the thousands of items necessary for the waging modern air warfare.

As the horizons of the air forces have broadened, the support of the air forces has also expanded to new dimensions. These dimensions must continue to expand, if the combat forces have to remain dynamic. The tremendous compression of decision time in modern war demands, not only that the combat forces be ready to fight instantaneously but that their essential materials be carefully dispersed and built to withstand conventional or nuclear attacks. Aircraft must be readily available for the movement of troops and material. **The complexity of action would always demand superior men...men of training, motivation and skill equal to accepting the trust...the task and the enigma of the combat.** For trying these forces together, there must be an unbreakable system of communication for their command and control. Without these essential support functions, the air combat forces will not be able to sustain operations. They will also not be able to successfully launch counter strike forces in the event of war.

RECONNAISSANCE:—Supply maintenance and battle area surveillance are vital for the conduct of air operations. Combat units must discover and accurately locate forward area targets and targets deep in the enemy territory. After attacks, intelligence specialists must make damage analysis of targets. Commanders must determine the capabilities of enemy forces many miles away. **Superior combat intelligence is an essential pre-requisite to success in modern warfare.** This is particularly so in air warfare, where bombers and fighters range over enemy territories to bomb industries and outlines of supply and transportation. The effectiveness of operations would depend directly upon their intelligence, speed and accuracy and completeness of their knowledge of enemy target system. Aerial reconnaissance even in the conventional context has at least to be of the same flexibility as the combat aircraft. **Aerial photography is the answer.** Aerial photography is virtually the only true, controlled and up-to-date planned source of military information. This is the only means of bringing back photographs which can be enclair material readily assessable to value because the time and purpose of the sortie is known. At the tactical level, it is now generally realised that reconnaissance aircraft and crew are a specialist elite. Bombers and fighters are stripped off their armament. They are fitted with extra fuel tanks so that they can do the reconnaissance job of going deep into the enemy territory and outstepping and out-distancing their pursuers. It is also now realised that fast flying photographic sorties call for accurate lines of flight, evenly spaced for good mosaic work. It is also realised that, flights of constant speeds and levels are essential and that this task can be performed only by a minority of pilots. Finally, the flight patterns and accurate noting of height and exact time over the target are important.

The machine of quick and effective photographic interpretation has now been brought to a truly fine art by all modern air forces. As soon as the aircraft lands, films are rushed to the nearest local centre, which are fully mobile. Within an hour or so, perhaps, much less with the currently advancing technology, developing, washing, drying, printing and **First Phase** interpretation is made. From this is also made, a rough assessment of bomb damage or

approximate quantities of vehicles, trains and troops on the move. In order to make this phase of maximum operational use, it is invariably supported by a card-index of intelligence and up-to-date war maps. The pictures are then passed on to the **Second Phase** action, where the interpreters take note of wider variety of matters. At the second and the **Third Phase** interpretation of photographs, much serious study is made with the use of stereoscope, which adds exactitude. Stereovision has shown the potentialities of clearing up the ambiguities of shadows in hills and valleys. It has also helped identification of parked aircraft, and stripping away the camouflage of bridges or buildings by showing the difference from surrounding terrain. It has also made it possible to view in relief, shadows cast by objects, which is often the final tell-tale clue. From the details of these photographs, a truly wide range of intelligence is obtained, particularly in the field of comparative developments in radar emplacements and anti-aircraft guns, growth and construction of airfields, with significant runway extensions. (See also "Push-Button War")

The need for global weather forecasting has since become of much greater importance than ever before. However, air experts are still not in a position to define the exact role of air reconnaissance in this regard. A number of specialised aircraft have all along been necessary for weather reconnaissance and their number will continue to increase, as the range of all type of aircraft increases and when bombing sorties are liable to pass through ever increasing number of different weather belts en-route to the target. Further, since atomic weapons have become more and more available for tactical ground support, so tactical army reconnaissance has become correspondingly more important. It is now generally recognised that up-to-the-minute knowledge is critical in the age of atomic shells and smaller atomic bombs which can be dropped even by fighter bombers. Finally, the extensive areas of modern war call for much extended reconnaissance work and a very specialised attention to the problems of liaison and centralisation.

AIR TRANSPORT:—World War II clearly demonstrated that air transport was vital, not merely for airborne operations but also for all other aspects of modern warfare, in which, both ground armies and air forces had to be extremely mobile. In the decade that followed World War II, the importance of transport aircraft, in particular of the new race of helicopters, was repeatedly demonstrated in the wars in Malaya, Korea and Indo-China. In the age of atomic and hydrogen bombs, that dawned later, it became clear beyond all doubt that, the armies of future would need a far greater number of transport aircraft and helicopters for dispersal and local flexibility. It is generally admitted that air transport of requirements of the contemporary age are infinitely greater. This is particularly so, when it is being debated and discussed at all levels of national and international life as to what extent can air transport ultimately answer emergency global calls for the containment of **brushfire type of warfare**, support and supply of major land operations, replace trains, road transport and merchant shipping as means of massive quick transport of troops and supplies.

AIR RESCUE:—Long before the outbreak of World War II, it was realised by air experts that aircraft could be effectively used to save lives by flying the wounded back to the base hospitals from the front-line casualty stations or by rescuing air men who may happen to bale out in the open sea. However, there was no centralised organisation and direction of the air rescue services

and the emphasis placed upon it depended upon the local commanders, equipment available and many other similar factors. The **Luftwaffe** was the first Air Force in the world to have a large fleet of transport aircraft organised for the purpose. The Germans were also the first to start an air-sea rescue service in the spring of 1940 with a squadron of float planes and flying boats. Later, the RAF and the American Air Force also developed this type of aviation. In the jet decade that followed the close of World War II, the flying boats were generally neglected by all Air Forces of the world. Perhaps, they were considered too expensive to build and awkward to find suitable anchorages for them. It was in the Korean War, that a few **Sunderlands** completed over 1,500 sorties, and reminded the disdainful in the world that **flying boats** still had their rightful place in the scheme of things. It was due to this reminder that the **Convair four-jet 80 ton flying boats**, the **Tradewind** was in series of production for the US Navy in the spring of 1954, and the Russians were reported to be flying the prototype of their first jet-powered flying boats from Black Sea base in the summer of 1953. It is, not only the Flying Boats, which have since been fully restored to favour as a vital element in the strategic air transport, in passenger airlines and as anti-submarine warfare and sea-rescue plans, but a vast variety of other aircraft, particularly, the helicopters have been developed and pressed into service. Modern air forces have developed the capacity to very greatly minimise human sufferings caused by the war machines. (See also "Post-War Air Forces.")

PARACHUTE AND AIRBORNE TROOPS:—As early as 1930, Soviet military commentators wrote that, the parachute was no longer a mere life-boat but an offensive weapon of the future. Beginning in 1930, and for full five years following, the Soviets were the pioneers in experimenting alone in training and organising cadres of parachutists. The Soviet example was followed by Germany where **Hermann Goering** created the first parachute unit from his own handpicked toughs of **Hermann Goering Regiment**. Other countries did not follow suit so quickly. The development in USA, Japan and Italy lagged behind very much. Whatever, the role played by the parachutists in World War II, they became a vital arm of all Air Forces only in the post war period. From the various examples of the employment of parachute and air-borne troops in World War II, air experts have since been able to predict some future operational trends, taking into consideration the changing nature and character of war. It is their view point that, in any global or inter continental struggle of the future, there will always be some fronts where concentrated defence will not be possible and these fronts will be ideal for air-borne and parachutist operations. Air borne troops and parachutists will also be used successfully on large scale to help, arrest, contain and crush guerrilla warfare and to render help to friendly resistance underground movements, promote guerrilla warfare or to carry out sabotage. They will also be used imaginatively or simultaneously with a successful advance, to cut the communications of a retreating armies, to increase confusion in retreat by spreading rumours, alarm and false instructions behind the enemy lines. Air-borne troops will also be valuable as a spearhead to sea-borne invasions, provided, a considerable measure of local air superiority, prior to the actual operations, was assured.

AIR INTELLIGENCE:—Military air-power has a little over sixty years to look back upon. However, serious air intelligence seems to have less than thirty years of traditions and experience. At the close of World War II, Gen-

eral Arnold, of the United States Army, reported: "Detailed and moment to moment knowledge of all aspects of enemy or potential enemy is essential to sound planning in time of peace. Full knowledge of social, industrial, scientific and military life is also necessary to provide warning of impending dangers. Past concepts of intelligence needs have been insufficient to cover the needs of a modern war. This has been particularly so in the field of air warfare... it needs to be realised that strategic air warfare can be neither soundly planned nor efficiently conducted without a continuous flow of detailed intelligence. In addition to the existing organisation, devoted to collecting, evaluating and disseminating, a continuous stream of intelligence data, we would, in future, require an infinitely more competent and active air intelligence organisation within the Air Force working with such a national organisation in time of peace and war." The views of the US General have since been accepted by all Air Forces of the world and there has since been ever growing emphasis on air-intelligence and air intelligence apparatus technology. (See also "Push-Button War").

THE NEW ROLE:—Ever since the early days of South-East Asia conflict, remarkable developments in the new uses of air power have been taking place. In consequence to these developments, not only the established functions of air power in limited conflicts have greatly expanded and improved, but many new functions have been evolved. What is really remarkable is, that air power has most successfully met every new demand placed on it, no matter how unprecedented and difficult. The most significant, and, therefore, most vital to the future freedom, peace and orderly progress of mankind has been that the new uses and refined or developed tactics have made air power a full-fledged and indispensable partner in counter-insurgency warfare. Air warfare experts in the United States of America are already claiming most proudly that determination and capability demonstrated by the USAF in resolving the Vietnamese conflict has proved a major factor in discouraging or at least limiting subsequent acts of irregular armed aggression. The new and improved aerial tactics and equipment have greatly enhanced the capability for fighting conventional conflicts of any type and scope. The emergence of air power as a decisive element in a limited war, such as currently being waged in South-East Asia, has given a direction to the formulation of new military strategy for the aero-space age. (See also "Post-war Air Force").

CIVIL ELEMENTS:—Civil elements, like the military elements break-down naturally, to flying and non-flying echelons. The flying echelons consist principally, of quasi military air organisations, such as the Civil Air Patrols, the Air Scouts and the nation's Commercial Air Lines. Organisations of air minded civilians such as, Civil Air Patrol, are of great value, both as potential reservoir for combat personnel and, as adjuncts to the military in its air defence role. In peace and war, the commercial airlines of a nation form one of principal cornerstones upon which air power of the nations is built. In time of peace, they are the mainstay of the aircraft industry. In time of war, they are valuable adjuncts to the air transport effort of the military.

CAPABILITIES AND LIMITATIONS:—When the question of economy, national security and capabilities of military forces are viewed in relation to one another, it must be borne in mind that air power is **not only a war-time instrument but also a peace-time instrument.** It offers double value of tremen-

dous power in times of war and also a tremendous power to exert influence against the outbreak of war. The third and vitally important value now developed is the active support to national (allied) statesmanship, and in times of danger, disorder and distress, services of the highest humanitarian ideals. Further, air power provides global capability in as much as it is not tied down to any particular areas of land or sea because of any intrinsic restrictions. It is inherently capable of flying anywhere in the world, at any time and any kind of mission dictated by national (allied) policy. Finally, air power capitalises on a nation's greatest strength. Adequate and modern air power, existing and operationally ready, serves to cancel the numerical advantage of the enemy. It permits to conserve the most precious element of national strength...the individual human being. In time of war, the employment of air power, like the employment of land and sea powers, divides itself into offensive and defensive roles. Like any other weapon, it is employed in such a way as to obtain maximum escape from its limitations. Offensively, air power today, by the use of advanced bases, can conduct strategic bombardment operations with nuclear and thermonuclear bombs on targets anywhere in the world. It can also conduct long-range reconnaissance operational, land, sea and amphibious. Defensively, air power can escort friendly aircraft and engage hostile fighters attacking surface installations and forces, land or sea. In addition, air power can transport both troops and cargo to points critical to military operations anywhere in the world. It can furnish quick and easy access to each other for key personnel, both military and civilian.

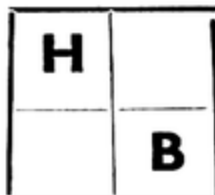
Numerous as the capabilities are, there are, however, definite limitations to the employment of air power. Aircraft on the ground are virtually helpless and highly vulnerable to enemy attacks. The defensive effort in this regard has to be efficient and effective to the highest degree. Further, the employment of the various air elements in military operations is limited by the range and payload capabilities, of the aircraft involved. Undoubtedly, increase in the payload capacities, air refuelling techniques and the development of higher performance aircraft have, to a very large extent, off set these limitations. However, they are still present and will always be present to a degree. They must, therefore, be carefully considered in all planning. Air power, moreover, unlike other major combat weapons, is extremely costly. Its large-scale employment imposes a severe economic strain even on the wealthiest nation. For this reason, the results to be achieved by its use must be sufficiently significant to justify the tremendous expenditure of blood and money involved. It is manifestly infeasible to employ air-power to defend every square mile of the national territory against hostile air attacks. Defensive air power must, therefore, be employed only in the defence of those areas whose continued integrity is vital to the nation. By the same token, offensive air power, must be directed only against those objectives whose destruction would weaken the enemy war making capacity to the maximum extent possible. The age old principle of economy of force assumes a truly national significance in the employment of present day air power.

HEMANI BROTHERS

Importers & Dealers in :

**Aromatic Chemicals, Natural Essential Oils, Resinoids
& Perfumery Compounds, Ball, Roller & Taper Bearings**

ROOM NO. 6,
MULCHAND MANSION,
PRINCESS STREET,
BOMBAY-2 (BR)



TELEPHONE: 311715

TELEGRAMS:
'HEMAGROUP'

CALCUTTA ASSOCIATES:

**CHUNILAL PRABHUDAS & CO. (CALCUTTA) PVT. LTD.
MANSUKHLAL & BROTHERS**

1, Bonfield Lane, CALCUTTA-1.

Phones : { 228067
228257

Grams : "AMRELIAN" (Calcutta)



USED FOR INDUSTRIAL
POWER ONLY

DO YOUR ELECTRIC BILLS GIVE YOU SHOCK?

Penalty for low power factor Rs.....?
Monstrous! What can be done?
Install a "Madhav Capacitor" and
see the difference in your bill.

You can reduce the losses in the
system and can enjoy the high
efficiency in power consumption
attaining reduction in electrical bills.

We manufacture a wide range of
power factor correction capacitors
and are quite competent to deal
with this problem.

Write today with a copy of your
latest electricity bill and ask
for our free advice.

MADHAV CAPACITORS PRIVATE LIMITED

Bail Bazar, Bharat Coal Compound, Kurla, Bombay-70. Phone: 555317

MILITARY AGENTS IN AIR ATTACKS

MILITARY Agents in air attacks are classified into: H.E. and Incendiary Agents, Chemical and Bacterial Agents and Atomic Agents, which have now come to be known as Thermo-nuclear Agents. H.E. and Incendiary Agents have since seen extensive combat employment and they are still the only ones in the armouries of non-nuclear powers. Thermo-nuclear weapons have seen very limited, and that too only accidental, combat employment. However, nuclear powers have since been maintaining huge stock-piles of thermo-nuclear agents as the only deterrent to a nuclear general war or the only hope of victory in the event of a nuclear general war. Chemical and Bacterial Agents have also seen a very limited combat employment. But they have since remained under ban in pursuance of the Geneva Convention of 1925. However, Chemical and Bacterial Agents appear to be the 'more likely to be used, in conjunction with H.E. and incendiaries agents, in the coming wars, which are expected to be mostly localised guerrilla cum conventional wars.' (See also "Push Button War").

CHEMICAL AGENTS:—Chemical Agents are gases which can be used in war to produce physiologically incapacitating effects on human body either by direct chemical action upon the surface of the bodies or internally when breathed or swallowed... These gases can be in solid, liquid or vapour form. Chemical Agents saw their first limited employment in World War I. Immediately, they were recognised as exceptionally powerful and effective, both in trench and mobile warfare. Their exceptional importance was seen in the extensive areas that they could cover, the suddenness of action that they could show, the lasting effect that they could produce and the massive casualties that they could inflict at comparatively very low cost. This was despite the fact, that the whole idea was in its infancy and the means of delivery were crude and extremely inefficient. A rare advantage in the use of Chemical Agents was seen in the fact that they were completely harmless to material and property. Victory in consequence to the combat employment of C.B. weapons could be truly gainful because it could bring to the victors, cities and towns intact and transport systems, etc. undamaged. However, public opinion throughout the world was shocked by this limited employment of Chemical Agents and their use in combat was prohibited under the **Geneva Convention of 1925.**

Whatever the reaction in the various countries against the combat employment of Chemical Agents and the limitations imposed by the Geneva Convention, no country which had its eyes fixed on the 'next war', gave up research and development of its Chemical Arm. During World War II, it was found that both Germany and Japan had prepared themselves fully to resort to chemical warfare in case the exigencies of war demanded such employment. Some of the Chemical Agents developed in Germany and Japan were captured by the American occupation forces after the close of the war. These substances were put under intensive study and it was considered only fortunate that Germany and Japan did not resort to Chemical Warfare. During the course of the war, it was also found that Soviet Russia had also fully recognised the vital importance of the Chemical Arm. Soviet Russia had set up the **Military**

Chemical Army Administration in Moscow some time in 1924. **Command Headquarters for Chemical Troops** were also formed at each **Provincial Army Headquarters** and fully trained officers were detailed to these formations. These officers were trained at the **Chemical Faculty of the Leningrad Artillery Academy**, at the **Higher Military School for Chemistry in Moscow** and at the **Normal Military Chemical School at Kalinin. Military Academy for Chemical Defence** was set up in 1931. By this time the Soviet Armed Forces had used chemical shells and balloons within their own territory a number of times. The experts were fully satisfied with the results. In the first month of the war, it was revealed that the mobilised units of the Soviet Army had reached the front with full complement of Chemical sub-units, supplied with all chemical substances as laid down in their Regulations. However, the Soviet Army Command did not order the use of chemical agents for fear that the invading Germans would use it as a pretext for accusing Soviet Russia for making the first use and thus provide a valid cause for massive retaliation by the Germans. Another limiting factor was the chain of disastrous defeats that the Russian armies had suffered at the hands of German armies. German Armies, it was later conceded by military experts, had captured intact almost the entire stores of the **Military Chemical Administration** and had shattered completely whatever delivery systems that it had. There was evidence available at the close of the War that Great Britain and the United States of America had not been lagging behind in the development of their respective Chemical Arm. Actually, reports suggested that some of the substances developed in Great Britain were infinitely more effective and lethal than anything developed in Germany, Japan and the Soviet Union.

BACTERIAL AGENTS:—Disease as a weapon of war has not yet seen any combat employment, except perhaps at the hands of Japanese in China. However, it has all along been considered as a very potential weapon of war and has remained under study as such. Since it has been lacking in actual combat experience, the main reliance of research and development effort has been on the accurate knowledge of the extensive fatal and incapacitating effects produced by such diseases as plague, influenza etc. It is claimed that when germ warfare was first investigated as a possibility, it was not considered feasible because of the technical difficulties involved in culturing and handling large quantities of deadly bacteria, loading them alive in bombs and shells and releasing them as such at the target points. There is enough evidence available to show that bacterial agents were studied extensively in all the countries during the years proceeding the outbreak of World War II. Opinion in all the countries was that technical difficulties in the way of culturing bacterial agents and the development of the necessary delivery systems could be easily overcome. The aircraft of all types, could be easily adapted to this use. In 1934, a British journalist reported some secret German documents in his possession which described experiments in airborne bacterial warfare attacks. They included the spraying of several stations in the Paris subway with harmless bacilli. The object was to determine the effectiveness of dissemination under conditions of actual combat. It was also later revealed by other sources that the Japanese had used bacterial warfare agents in their attack on a Chinese town. However, the findings on the results of this attack never became public and therefore no positive conclusions could be drawn. There were no such well founded reports on the Russian activities in this regard. However, military experts throughout the world were convinced that, confronted with the twin danger posed by the Nazi Germany and the Western Democracies, as the

Russians were, they could not have possibly overlooked and ignored this vital element of warfare. British and American military experts later themselves conceded that, stirred by the intelligence reports of the German and Japanese advances in bacterial warfare, their Governments were also engaged in similar experimental projects, although their interests in this particular form of warfare stemmed purely from defensive considerations.

POST-WAR DEBATE:—Immediately after the close of the war, it became a matter of active discussion in the politico-military circles of all countries as to why the warring nations did not resort to CB warfare even in the hour of their desperation or in the hour of near collapse. The discussion has continued through all these years. The answer has not been found in the much publicised Geneva Convention or the inhuman definition attached to this form of warfare. It has been argued that atomic agents were known to have infinitely greater lethality and yet they were used with the threat that the employment of atomic agents will continue unabated if the Japanese would refuse to surrender. The answer has been found in the changed nature and character of war and the actual operational requirements. It has since been conceded by politico-military experts in all countries that World War II, right from its outbreak, was different from all the wars earlier fought. It was a war of massive, mobile and mechanised armies acting in concert with long-reaching and hard hitting air arms, toned tuned to inflicting crippling blows and scoring lightning victories. There was no question of digging in, there was no question of bogging down and there was certainly no question of inching forward in the face of traditional and conventional resistance in the image of World War I. Attacking armies could not wait for any weapon system to take days and weeks to show its combat effects. Hitler's blitzkrieg had changed the face of Europe even before the distant world had fully realised that war had broken out in the Continent, which at that time, was controlling the politico-military destinies of most of the countries on the Asian and African continents. The advance of the German armies into the Soviet Union was a stunning vindication of the new technique of warfare. Never before in history had such massive forces, armed to teeth, been shattered, destroyed and rolled back the way the Russian forces were done. In the East the same process was repeated by the Japanese with much greater brilliance. Not highly rated by the European powers though, the Japanese armed forces moving at incredible speed, sprang surprise after surprise... they swept across distant lands, separated by vast oceans and were ultimately knocking at the frontiers of **India, the most precious jewel in the British Imperialist Crown.** And when it came to the turn of the Allies, they repeated the process exactly the same way as the German and Japanese had done earlier.

THE ATOMIC RELIANCE:—Towards the close of the War, Americans were successful in developing and making the first use of the atomic bomb. The results were beyond the wildest expectations of the authors and architects of this ultimate weapon. Immediately after the close of the war, Americans enjoyed absolute monopoly of the Atomic agents. They brandished these agents before the entire world as the strength to hold down all countries... all

peoples. However, Americans could not enjoy this monopoly for long. The other power giant, the Soviet Union gate-crashed into the atomic world and was soon the leader. This opened up a fresh armament race between the two power giants.... race almost wholly confined to what had by that time come to be known as 'thermo-nuclear weapons'. The new generation of weapons included rockets and missiles of continental and inter-continental ranges and space vehicles of various types. The mechanised war appeared to be becoming a "push-button war" and the new generation of weapons appeared to be acquiring all the capabilities of destroying the entire human race within a matter of minutes. The only deterrent to war during this period was that both the power giants claimed the capabilities of 'assured destruction' of the other side without any means of effective defences. Besides, limited nuclear capability had been developed by some other countries also, notably France. However, the most significant development was that China moved on her way to becoming a major nuclear power. The Nuclear weapons appeared to be nullifying themselves and the chance of a nuclear general war receding every dawn and dusk.

GUERRILLA WARFARE:—Guerrilla warfare had been known to mankind from times immemorial. However, it had been losing its importance on account of ever increasing reliance on positional warfare. During World War II, a limited resort was made to guerrilla warfare in the German occupied countries of Europe. The results were impressive. It is entirely possible that guerrilla warfare would have assumed greater proportions and endeared itself to the European masses if the war had not come to a sudden and a dramatic end, leaving the erstwhile conquerors completely vanquished and the occupied countries free as ever before. For reasons, which it was not difficult to understand, public attention was not permitted to be much focussed on the Chinese mainland where, under the leadership of a genius of a man, **Mao Tse-tung**, guerrilla warfare was emerging as a major form of warfare, with its own set principles its own strategy and its own tactics. Politico-military opinion throughout the world was stunned when the guerrilla forces under the command of Mao Tse-tung liquidated the Japanese imperialists and rendered wholly ineffective the mighty monstrous military machine of **General Chiang Kai-shek**. History of warfare opened an entirely new chapter, when immediately after the establishment of Communist regime on the Chinese mainland, Mao Tse-tung presented guerrilla warfare to the world as the only warfare which could survive the conventional warfare and which could make it impossible for any nuclear general war to break out. According to Mao, and others of his thinking, Guerrilla warfare could, not only enable the masses of people to liberate themselves from their foreign masters, but also from the exploiters and oppressors of their own race and generation. The masses of people would not remain tied down to the dictates of the so-called power giants under the concept of '**Polarisation of forces**'. Polarisation of forces, if any, both at the national and international level, would be between the exploiters and the exploited. There would be mass uprisings in each country and for its own national objectives. As a result of this, every people in every country will emerge free. This will render obsolete the very idea of another World War. This will also nullify the mortal threat posed by thermonuclear weapons and cut down the capabilities of conventional weapons. War, will not take the shape and form of "**Push Button**" as envisaged by the power giants or even remain in the hands of mechanised armies. War in future would be localised conflict and of the guerrilla can conventional type. It is the endurance capabilities of the common man,

brandished as 'bandits outlaws, criminal, etc., but a patriot in reality, and not the sophisticated weapons, which will be the decisive factors.

THE CHANGE:—For several years, even after the war, the power giants commanding massive stockpiles of thermo-nuclear weapons refused to yield to the fantastic claims of Mao Tse-tung. However, the sad and the tragic experience of the US Armed Forces locked up in the South-East Asia, particularly in Vietnam, compelled them to reconcile themselves to this contention increasingly. Having seen a substantial amount of truth in the assertions of Mao Tse-tung, the US military planners began to talk increasingly in terms of anti-guerrilla or counter-insurgency warfare. During their commitment in South-East Asia, the American Forces tried all the conventional weapons in their armoury. They even resorted to the threat of using thermonuclear weapons. Nothing was able to wrest the initiative from the guerrillas. It was in consequence to this that the possibilities and probabilities of resort to CB warfare began to be considered, though in very much subdued tone. Military experts in the US seemed to be increasingly inclined to think that CB weapons would be the most effective in preventing arresting, containing, and liquidating the guerrilla wars in all their stages and phases and even in their so called safe sanctuaries as well as in undefined and elusive battle fields. Thinking has since continued unabated.

PREPAREDNESS:—Writing on the possession of CB weapons by the major powers of the world, particularly the United States of America, Leonard Deaton has only recently conceded that; **"Disease as a weapon of war has been under vigorous study and development throughout the last decade. A number of new agents have been found which can cover extensive areas and can incapacitate large populations."** Since President Kennedy's sharp increase in American spending on Chemical and Biological warfare, there has been increasing evidence that the United States have been moving steadily but surely towards the stockpiling of certain weapons based on bacterial virus. Deaton has further conceded that the Soviet Union has also equipped her armed forces with very large stockpiles of nerve gasses and Bacterial elements. The statement issued by President Nixon, soon after the assumption, of Presidency by him, speaks only of the US renunciation of the first use of lethal weapons. Conceding that, biological weapons have massive, unpredictable and potentially uncontrollable consequences and that they are capable of producing global epidemics and impairing the health of future generations, President Nixon has spoken only of renouncing the use of biological weapons and other methods of biological warfare excepted for defensive purposes. Elaborating his theme further, and emphasising more clearly and categorically the importance of CB programme will not leave the country vulnerable to any surprise attack by an enemy who does not observe these rational restraints. Our intelligence services will continue to watch carefully the nature and extent of the biological programmes of others and necessary counter measures will remain in progress. Throughout the period following the close World War II, Soviets have been insisting that they will keep themselves in absolute readiness to wage the war in defence of Soviet fatherland and will not hesitate be use of any weapon systems which will ensure victory.

WE CANNOT JOIN OUR GALLANT FORCES AT THE FRONT....

**so we send our toughest
materials instead.**



Paper and fabric laminated
sheets—tough, versatile and
dimensionally stable.

Tubes—lightweight and easily fabricated.



Offers a wide range of quality
woodgrain designs.



Moulding material—with low
water absorption and high
electrical properties.

Phenolic resins..versatile bonding agent

Polyester resins—inexpensive, non-corrosive with high shell
strength

To meet any specification of design or strength

BAKELITE HYLAM LIMITED

Pace Setters in Thermosetting Plastics.

CHAPTER VIII

AIR POWER

POST WAR AIR FORCES

IMMEDIATELY after the close of World War II, air power was almost exclusive possession of the two power giants . . . the United States of America and the Soviet Union. Air Forces of other European countries, whatever their size, strength, strike and fire power, were immediately drawn into the alliances sponsored by these two power giants. In actual fact, therefore, these air forces, despite being the air arms of sovereign countries, could have no independent existence of their own. It was only in consequence to the chained process of freedom in the countries earlier held under imperial systems that there came into existence an ever increasing number of air forces, some of which did not prefer to be drawn into the alliances and thereby brought into existence what later came to be known as non-aligned and non-committed air-forces. They were committed only to the task of their respective defence.

Despite the fact that the original shape and form, which was never monolithic even in the initial stages, has gone deep and far-reaching changes, the air forces of the world are still, in the main, divided into three categories, i.e. those under the alliances sponsored by the United States of America, those under the alliances sponsored by the Soviet Union and those owned by the non-aligned and non-committed countries. Two events to most radically alter the air power capability in the context of the modern war, which have taken place in recent years have been; virtual break-up between the two Communist giants; Soviet Union and China and greater inclination of the later towards the United States of America and the Indo-Soviet Treaty of Friendship and the resultant process of mutual co-operation and greater integration of military thought and activity in the two countries. What exactly would be the alignment of the air forces of the world in the coming future, and with what global objectives, would be hazardous guess in the present fluid and fast changing situations. However, following is the known air power strength of the power giants, their allies and of the non-committed and non-aligned European countries.

*With our
salutations*

to

Our

GALLANT

ARMED FORCES

**...THE GUARDIANS OF
OUR NATIONAL
FREEDOM HONOUR
AND INTEGRITY**



THE SWADESHI CHEMICALS PRIVATE LIMITED

Manufacturers of

INDUSTRIAL CHEMICALS

3rd Floor, Army & Navy Building, Mahatma Gandhi Road,
BOMBAY-I.

GRAMS: 'POTPERM'

TEL.: 252133

U.S. AIR POWER

AT the close of World War II the U.S. Army, Air Force, had more than 2,253,000 personnel and as many as 64,000 aircraft on its operational strength. However, immediately after the war, it was confronted with the problem of cutting its personnel strength by 1,800,000 and getting rid of as many as 50,000 aircraft. The cut in the size and strength of the air power was dictated by three main considerations, (a) acute budgetary limitations, (b) general faith and belief that there would not be another war in any foreseeable future and (c) Services controversy over the future of Air Power and its organisation, administrative and operational control.

BERLIN AIRLIFT:—The Soviet blockade of Berlin was the first major post-war challenge which the USAF was called upon to meet. Historically, the Berlin Airlift was the first important peace time use of air power as an instrument of national policy. The operation achieved its purpose...defeating the land blockade of Berlin without the use of military force. The overall value of the airlift was incalculable. In addition to accomplishing its diplomatic purpose, the airlift emerged as an inspiring example of united effort of the Army, Navy and Air Force, working in close co-operation with other department of the United States Government, as well as with the Governments of France and Britain. It was also a severe beneficial field test of the operational efficiency of air power, particularly in flying techniques and logistic support, supply, maintenance, communications, weather services etc. The intensity of the operation telescoped a decade of air transport experience into one year.

THE KOREAN WAR:—As a result of the process of reduction initiated, the US Air Force personnel strength stood at about 4,11,000 and about 17,000 aircraft, less than 7,000 of which were first line combat planes, when the Korean War broke out in 1953. Normally, the reduced air power of the United States could not have been expected to render a creditable account of itself in the fighting in Korea. However, it was still able to prove itself a force truly hard hitting, long reaching and capable of performing all the tasks, despite several severe limitations imposed by the nature and character of war...**the very first limited war in the post-war years.** The US Air Power was able to acquit itself so creditably because the process of reduction in personnel and numerical strength of the aircraft had been accompanied by intense effort to minimise, as much as possible, the adverse effects of these quantitative reductions. The Air Force had during this period diverted to two major goals; (a) **Increase in qualitative capacity, so as to be able to perform more effectively as a member of the land-sea-air team, under the strategic concept of the Joint Chiefs of Staff and (b) Increase in management efficiency so as to obtain maximum value from the funds appropriated.** Besides, it was during this period that US Air Arm developed a new type of overall organisation, with its major Commands organised according to the nature and character of the job that each had to perform, rather than according to the geographical location or the aircraft type. It was also during this period that the US Air Arm moved into the jet age and possessed aircraft which could fly faster, farther and at higher attitudes, carrying much bigger payloads than could possibly be imagined during the war years. It was this superior mobility, flexibility

and know-how of the airpower which was demonstrated during the Korean fighting and which accounted for the victories that were scored against enemy air force.

FRESH BUILD UP:—The most significant consequence of the fighting in Korea was that, the US Air Arm was stirred to much greater activity at much accelerated pace and under the advantage of declining opposition from the Government and other Services. Even before the hostilities had ended in Korea, the USAF was clearly committed to a crash build-up programme, designed to expand its capabilities to meet ever increasing world-wide commitments. The size of the Air Force was slated to be doubled. America's deterrence was going to be the threat of massive retaliation and the **Strategic Air Command** was going to be the instrument of delivery. All the Air Force Commands were to be developed and expanded into balanced forces designed to supplement and support the Strategic Air Command. The years immediately following the close of the fighting were, therefore, crowded with developments, each, more important and significant than the other. So many and so far-reaching were the developments that the US Air Arm once again emerged as the very first line of defence, the longest and the hardest hitting arm of protection that the world had ever known.

V.T.O.L. CAPABILITY:—The helicopter had arrived on the military scene in the early 1950s. Its initial development had been stimulated by the insurgency in **Malaya**. Its further maturity had been brought about by the war in Korea. However, it was after the Korean War and more certainly after the American involvement in Vietnam that came about the most remarkable advances in helicopter technology and tactics. Earlier, the most obvious use of the new device had been seen in its being a means of **looking over the other side of the hill, a military exercise that had remained with the armies indefinitely**. Its further use had been seen in the ease with which the casualties from the field could be removed. The next stage of realization was that helicopter could save time and effort in the deployment of troops. This realisation had come particularly during the **French war in Algeria**. However, it was only after 1961, when the US became involved in the Vietnam that came about the most remarkable advances in helicopter technology and tactics. By 1962, the US had thousands of piston engined helicopters, ranging from ultra-light craft of 500 lbs. to flying cranes of about 30,000 lbs. all up weight, and of this about 400 lbs were taken up by the crew. And if all weather operations were intended, as much again was taken up the electronic equipment. Further, extensive research was also carried out in the development methods of automatic control with the primary objective of countering oscillations the helicopters were prone to, especially when in the hovering positions. As a result of these researches and applications, the helicopter by 1962, had more of a round the clock performance than during the Korean war. By early 1969, the strength of the US aircraft in and Vietnam was well over 4,000, of which 3,600 were helicopters.

THE BRUSHFIRE WARS:—During the uneasy years, between the Korean and Vietnam conflicts, peace was repeatedly disturbed by series of **Brushfire crisis**. Time and gain the growing and expanding USAF proved that it could make decisive contribution at every level of aggression, including insurrection and other forms of limited conflicts. By its selective employment, the USAF could bring itself to bear in many ways. The first among the events following the Korean conflict to shatter the hopes of world peace was the **Soviet**

crushing of the Hungarian revolt. This was followed by the **Suez crisis** and the attempted communist take over of **Jordan** in 1957. In the summer of 1958, the threat of protracted warfare erupted in the Middle East with the assassination of **King Faizal II** and the rebel seizure of the **Iraqi Government**. In response to the request from the Iraqi Government, the US Air, Ground and Naval Forces, including elements of **USAF's Tactical Air Force**, were rushed to the Lebanon. Prompt action by the forces so deployed localised the threat and forestalled the overthrow attempt. Hoping to capitalise on the Middle East crises, the Chinese almost immediately began a heavy bombardment of the Islands of **Quemoy** and **Matsu**, off the China coast. Again, the United States took prompt action by ordering the **7th Fleet to the Formosa Straits**, and by deploying the elements of **FACAF**, known as the **'Mobile Strike Force'**, together with US **'Compositive Strike Force'**. With the arrival of the 60s, new threats erupted. The focus shifted to **Congo** in mid 1960... and to one of the longest airlift operations in history. More than dozen years had passed since the 1948 Berlin blockade. In the meantime, the airlift had become truly strategic in scope and global in range, with high speed and mobility as its fundamental ingredient. In the fourteen months, following July, 1969, **MAC-United Nations Congo Airlift Operations**, under **ESAFE** control, flew 77,000,000 ton miles, airlifting 26,000 UN troops and 20,000,000 pounds of cargo. Each round trip mission from Europe to the Congo was equal to forty-four flights through the air corridor from West Germany to Berlin. In mid 1961, a new crisis erupted when **East Germany** closed border between East and West Berlin and constructed the wall which was to divide the city for several years to come. Once again the **USAFE** was prompted to respond... This time with an unparalleled peace time build up. The air operations were challengingly successful. In a dramatic report in October, President **Kennedy** told the nation and the entire free world how US Air Force reconnaissance photos had clearly shown that **Cuba** was being armed with offensive missiles by the Soviet Union. In order to meet the threat, the US alerted the military units to high state of readiness. The US also employed a naval quarantine against the shipment of further aggressive weapons. All this was climaxed by the deployment of Air Force men and equipment. The fighter-bomber potential reached peak alert status. **TAC** and **SAC** and Navy reconnaissance aircraft provided round-the-clock observation and photographs of all missile sites. The display of military might and determination to use it unless the Communist dismantled their rockets and removed the aggressive equipment, choked off the threat.

THE VIETNAM CONFLICT:—The active US commitment in the Vietnam struggle began with her assuming the complete responsibility for the training and equipping of the South Vietnamese forces which, in 1957, numbered about 1,50,000. However, as the insurgency grew in size, the US in 1959 and 1960, began to provide more economic and military aid in July, 1961. **President John F. Kennedy** ordered the deployment of more US military advisory forces and equipment. This began with **Air Force 'Fragale' Special Air Warfare Unit** of 151 officers and men equipped with T-28s, C-4s and B-26s. The Army despatched **Special Forces Troops** and helicopters to give the South Vietnamese forces more mobility. During 1962, through 1964, additional US advisory Units were sent to help the Saigon Government. To strengthen its combat advisory mission, the Air Force, in June, 1964, began replacing its B-126, and T-28 aircraft with A-12 skyraiders. The **USAF** also despatched more airlift, reconnaissance and other type aircraft. However, despite the mounting commitment

and operational activity by the US, political and religious difficulties continued to rack the Saigon Government, culminating in the overthrow and assassination of the Vietnam President in 1963. A succession of military Juntas were unable to cope with internal disorders or the task of running war torn government, with the result that the military effort faltered. Simultaneously, **North Vietnam**, stepped up its assistance... both material and man-power to the **Viet Cong**. By early 1965, after a number of incidents, directed primarily at the Americans, **President Lyndon B. Johnson** prepared to increase the military pressure on, both Hanoi and Viet Cong. At his direction on February, 7, 1965, Navy Carrier and Air Force planes began bombing North Vietnam Military targets. This was followed in March with the despatch of US combat troops to Vietnam. In the middle of the year, large scale US Air, Ground and Naval units began pouring into the country. The buildup was rapid... from almost 13,000 US advisory personnel at the beginning of 1965 to 1,84,000 combat and support forces by the end of the year. More forces arrived in 1966. By the middle of 1967 they totalled 4,60,000.

THE EXPANDING ROLE:—Concurrent with the ground build up, the Air Force role grew up by leaps and bounds and its first line aircraft **F-4C Phantoms, F-100 Supersabres, F-5 Skoshi Tiger, F-104 Starfighter and F-105 Thunderclue** were soon operating in South Vietnam against the elusive communist ground forces and in North Vietnam against the lines of supply and mushrooming anti-aircraft and SAM sites. An innovation in the tactical field during the period was the replacement by **Boeing KC-3 Tankers** of many of the fighter bombers on their way to North Vietnam. It was in June, 1965, that **Boeing 52** entered in the fray. In 1965, when President Johnson ordered large-scale intervention, the situation in Vietnam was critical. The government was within an ace of being toppled and there was little doubt that, had the Americans not arrived, Viet Cong and their political masters would have been firmly in power. In the operational context, the tide that later turned was to a very large extent due to the induction of helicopter in the following main roles. (a) **Troop lifts both into their own fixed or fire support base and into combat assaults.** (b) **Deployment of artillery pieces and other heavy equipment i.e. engineer plant.** (c) **Tactical reconnaissance.** (d) **Logistic support of troops who could not be resupplied by surface means.** (e) **Escorts for troop-carrying helicopters, boat and truck convoys.** (f) **Aerial fire support.** (g) **Air cavalry and (h) Casualty evacuation.** However, the following were the main achievements.

Mobility:—In the US opinion, the major cause of the French military defeat in Indo-China was their tragic lack of mobility. The Americans were not prepared to make this mistake. They appreciated that success depended upon their mobility to get into the enemy base areas and disrupt their working. Helicopter was found as an ideal means of gaining and retaining this mobility. **Fire Support Base:**—Further, the Americans resurrected the concept of the fire support base. There was nothing new in the idea. They corresponded largely with the fortified camps that **Julius Caesar** had established in **Gaul** and from which his legionaries could sallv forth to pacify the population in the surrounding country side. The French had used them in their war against the **Viet Minh** without any conspicuous success principally because, having them up, they had neither sufficient fire power nor logistic resupply capacity to keep them in being. It remained to the Americans, with their apparently limitless helicopter resources to demonstrate that the concept was feasible. Certainly no other vehicle could even remotely have looked at the task. **Jitterbug and Seal:**—In the begin-

ning, especially before the South Vietnamese divisions had started to be employed on offensive operations, the Americans were very thin on the ground. **'Jungle Bashing'** for its own sake was never a device to which they could resort, for there were just too many enemy to permit overmuch unproductive patrolling. It was customary for an American infantry battalion to be given up to twenty targets to check each day. However, it was by a process known as **'Jitterbug and Seal'** that the enemy was prodded into activity and then surrounded and destroyed. By working a complicated schedule of troop lift, reconnaissance and gunship helicopters, companies were combat assaulted into possible enemy locations one at a time. If after a cursory search, nothing was found, they were then lifted to the next objective. If on the other hand, they became involved in battle, they could either cope with it themselves or they were quickly reinforced. The campaign proved to be extremely successful. **The Gunship:—**Increasing enemy counter-measures forced the US Army in Vietnam, first to arm defensively their "slicks" and then to develop the gunship. There were many roles for the gunship. First, they flew as escorts for the "slicks" ready to suppress any ground fire encountered. Next, they assisted in the fire preparations ('Prepping') of landing zones to ensure that the enemy kept their heads down during the crucial moments of the initial troop insertion. They provided opportunity or 'on call' fire support for infantry in much the same way as conventional artillery and mortars. They flew top cover for truck convoys and landing craft on re-supply runs. They joined forces with the helicopter putting up the 'birds' and the 'gunship' killing them. Experimentally, they crammed light sources into the aircraft and went stalking enemy night supply trails. **Air Cavalry Squadron:—**Another type of helicopter unit put into combat uses was the 'Air Cavalry Squadron'. The unit represented a balanced force and comprised reconnaissance and troops lift helicopters and gunships. Their tasks were the classic cavalry ones, of finding the enemy, bringing him to battle and the guarding of open flanks. The units were steeped into the rich history of the US Cavalry and used the helicopter in much the same way as their forebears had used the horse or armoured car.

PROUD ACHIEVEMENTS:—Vietnam has been the longest, the most hazardous, as also the most controversial commitment of the US Armed Forces. Years have rolled by and still the conflict is going, requiring greater and greater commitments of the US Armed Forces. The Soviet Union has described it as a dirty war unleashed by the United States of America, the most powerful of the imperialist countries, against the just struggle of the Vietnamese people for their freedom, independence and their country's peaceful reunification. . . . Flagrantly interfering in Vietnam's internal affairs, the war has obstructed the fulfilment of the 1954 **Geneva Agreements**, envisaging consultations between the North and the South, the holding of general elections and the country's unification. Denouncing it as the most criminal aggression against the Democratic Republic of Viet Nam, the Soviet Union has all along demanded the unconditional and complete termination of the war. The Soviet viewpoint has been shared by all other 'socialist countries'. Public opinion even in the United States and in the free world countries has not been able to conceal its dissatisfaction with the US motivation in the commitment and results hitherto achieved. However, the Air Power experts and leaders of the Air Forces in the United States have continued to be proud of the achievements of the US Air Force. According to them, Air Power was pressed into operation in Vietnam

with four major objectives: (1) To obstruct, reduce, harass and impede the flow of war supporting material and personnel within North Vietnam and from North Vietnam to South Vietnam. (2) To destroy those military and industrial resources of North Vietnam that contributed most to the support of its aggressions. (3) To reduce the flow of external aggressive elements being provided to North Vietnam and (4) To cause North Vietnam to pay an unacceptable price for its aggression. If the air campaign has not achieved its objective to a greater extent, it cannot be attributed to the inability or impotence of the Air Power. It attests, rather to the fragmentation of the air might by overly restrictive controls, limitations and the doctrine of 'Gradualism' placed on the aviation forces which prevented them from waging the air campaign in the manner and according to the time table which was best calculated to achieve maximum results.

PRESENT ORGANISATION:—As at present, the USAF is organised into (a) **The Strategic Command (SAC):**—With the twin mission to maintain force capable of deterring aggression and, should deterrence fail...to fight and win. Its secondary task is to meet the demands imposed by non-nuclear war. (b) **The US Air Force in Europe (USAFE):**—A lean, combat ready command, its job is to train and equip Air Force units pledged to NATO and to aid other NATO nations in developing the combat effectiveness of their Air Forces. (c) **Pacific Air Force (PACAF):**—Its task is to maintain air superiority in the Pacific. The Command is responsible for one and one half billion people of some twenty nations. (d) **The Military Air Lift Command (MAC):**—A major Air Force command. MAC is the purveyor of airlift and technical services for the entire Department of Defence. As DOD's single Manager Operating Agency for strategic airlift, MAC is responsible for managing and directing a global airlift system. (e) **Air Force Systems Command (AFSC):**—It is the level at which all the essential ingredients for detailed review and timely decisions come to life. (f) **Air Force Logistics Command (AFLC):**—Its mission encompasses the total life cycle of the system or equipment (g) **Tactical Air Command (TAC):**—Its task is to maintain sufficient tactical air power in position to meet all contingencies. (h) **Air University (AU):**—It is the professional education centre for the United States Air Forces and it prepares leaders who, in large measure, determine the calibre of tomorrow's Air Force. (i) **Air Training Command:**—It is one of the world's largest vocational organisations and one of the largest Air Commands in the USAF. (j) **Aerospace Defence Command (ADC):**—As a major (USAF) combat command, it performs the global aerospace defence missions. (k) **Alaskan Air Command (AAC):**—The oldest of the United States Air Forces major command, it stands poised and ready on America's last frontier, providing Top Cover for America. (l) **Headquarter Command (USAF):**—It has vested interest in more than 38,000 personnel as well over 800 locations all over the world. (m) **US Air Forces Southern Command (USAF):**—Air defence of the canal zone and the administration of Air Force military assistance throughout Latin America are the two main responsibilities of this Command. Its area of operation extends from the Southern border of Mexico to the southernmost tip of South America, an area two and a half times, the area of United States. (n) **Air Force Communications Service (AFCS):**—It is a single manager concept for communications-electronics, capable of performing engineering, installation, operation and maintenance. (o) **USAF Security Service (USAFES):**—A globally dispersed Command its main task is the denial of intelligence to any enemy under combat conditions.

PRESENT STRENGTH:—As at present, the total personnel strength of the USAF is 757,000; and 6,000 combat aircraft (figures for manpower include strategic air forces). General purposes forces include: **(1) Tactical Air Command:** 110,000 personnel and about 1,000 aircraft normally based in the United States. Twenty-three F-4, four F-105, one A-7D, and four F-111 fighter squadrons; nine tactical reconnaissance squadrons with RF-4Cs, 16 assault-airlift squadrons with C-130Es; four STOL airlift squadrons with C-7s and C-123s; two electronic warfare squadrons; seven special operations squadrons with A-37s, AC-119s, C-123Ks, and AC-130s. **(2) US Air Forces Europe (USAFE):** 50,000 personnel, controlling Third Air Force (Britain), Sixteenth Air Force (Spain), Seventeenth Air Force (West Germany), and a Logistics Group in Turkey. Twenty-one fighter squadrons (and four in USA on call to USAFE) with 475 F-100s, F-4C/D/Es and F-111Es; five tactical reconnaissance squadrons with eighty-five RF-4Cs; two transport squadrons with C-130s. **(3) Pacific Air Force (PACAF):** 120,000 personnel, controlling: Fifth Air Force: over 25,000 personnel (bases in Japan, Korea, and Okinawa) with F-4s, RF-4Cs and C-130s (of which 160 F-4s, a few F-105s, RF-4Cs, and C-130s. **Thirteenth Air Force:** About 32,000 personnel (responsible for the Philippines, Taiwan, and Thailand, and all joint planning under SEATO), with F-4s, F-105s, RF-4Cs and C-130s (of which 160 F-4s, a few F-105s, and forty RF-4s fly from Thailand). **Seventh Air Force:** 33,500 personnel (the air component of the Military Assistance Command, Vietnam, co-ordinating the operations of the Vietnamese Air Force) and 200 F-4C and A-37 fighter-bombers; forty RF-4 reconnaissance aircraft; 150 A-1E, A-37A, AC-119, AC-130, and C-123 counter-insurgency aircraft; seventy-five C-7A assault airlift aircraft, a large number of observation and liaison aircraft and helicopters. **(4) Military Airlift Command (MAC):** 90,000 personnel. Eighteen heavy transport squadrons with thirty-five C-133s, 260 C-141s and twenty-five C-5As; twenty-four medical transport, weather recon, and search and rescue (SAR) squadrons. **Reserves:** Air National Guard: 89,000 personnel men and about 1,500 aircraft in sixteen fighter-interceptor, twenty-eight tactical fighter and attack, eleven tactical reconnaissance, three tactical air support, four special operations, seven tanker, and twenty-two air transport squadrons. **Air Force Reserves:** Average paid training strength of 48,400 personnel plus training tours for a further 2,600 personnel; 400 aircraft in thirty-six squadrons include two C-119, thirteen C-124, and eighteen C-130 transport squadrons (the others have tactical support, special operations, and SAR roles).

NEW DEVELOPMENTS:—The inexorable trend towards few programmes which are individually more expensive has continued. Many of the biggest US programmes have had a rough passage through a hostile Congress. Not least of the targets for Congressional criticisms has been the AMSA, **advanced manned strategic aircraft**. North American Rockwell B-1A would be the biggest aircraft programme in history in monetary terms, if it runs its full course. When operational, it will replace the B-52 and to have a performance, and in particular penetrability, markedly superior to that of the big earlier machine. It will be a variable sweep machine with a large, bulging, area-ruled fuselage, housing operators fuel, weapons and crew comprising pilot, co-pilot and five systems analysts. Its dash speed will be Mach 2.2 achieved by F-101 engines in underwing boxes, with limited capability to penetrate at about Mach-1 at low level. Its unrefuelled range will be at least 6,100 miles on a mixed profile carrying a weapons load of over, 50,000 lbs. The aircraft will have a

gross weight under 400,000 lbs and will be about as large as Boeing 707. The main weapon in the initial stages would be **SRAM/short range attack missile**, already in production. The main news in the field of air defence has been the award after eight years of study, of hardware contracts for the **AWACS**, airborne warning and control system, henceforth to be the **Boeing A-1**. It is intended to serve, not just as air war but a total war situation. Among its major items of equipment will be the most powerful and precise overland radar yet planned. This radar will have a thin scanner in giant saucer radars above the fuselage. The radar will be intended to watch from 35,000 ft and detect any aircraft, vehicle or even infantry man moving against the terrain below. The aircraft will also carry unprecedented communications and data processing ability and will incorporate roughly twice the avionic power of any previous aircraft.

NORTH ATLANTIC

TREATY ORGANISATION

THE North Atlantic Treaty was signed in 1949 by Belgium, Britain, Canada, Denmark, France, Iceland, Italy, Luxembourg, the Netherlands, Norway, Portugal, and the United States; Greece and Turkey joined in 1952 and West Germany in 1955. The treaty unites Western Europe and North America in a commitment to consult together if the security of any one member is threatened, and to consider an armed attack against one as an attack against all, to be met by such action as each of them deems necessary, "including the use of armed force, to restore and maintain the security of the North Atlantic area. The Paris Agreements of 1954, added a Protocol to the treaty, strengthening the structure of NATO, and revised the Brussels Treaty of 1948, which now includes Italy and West Germany in addition to its original members (Benelux countries, Britain and France.) The Brussels Treaty signatories are committed to give one another all the military and other aid and assistance in their power if they are the subject of armed aggression in Europe. Since 1969, members of the Atlantic Alliance can withdraw on one year's notice; the Brussels Treaty was signed for fifty years.

ORGANISATION:—The Organisation of the North Atlantic Treaty is known as NATO. The governing body of the alliance, the **North Atlantic Council**, which has its Headquarters in Brussels, consists of the Ministers of the fifteen member countries, who normally meet twice a year, and, in permanent session, of ambassadors representing each government. In 1966, France left the integrated military organisation and the fourteen-nation **Defence Planning Committee (DPC)** on which France does not sit, was formed. It meets at the same levels as the Council and deals with questions related to NATO's integrated military planning and other matters in which France does not participate. The Secretary General and an international staff advise on the politico-military, financial, economic, and scientific aspects of defence planning.

Two permanent bodies for nuclear planning were established in 1966. The first, the **Nuclear Defence Affairs Committee (INDAC)** is open to all NATO

members (France, Iceland, and Luxembourg do not take part); it normally meets at Defence Minister level once or twice a year, to associate non-nuclear members in the nuclear affairs of the alliance. The Secretary-General is Chairman of the NDAC. The Second, the **Nuclear Planning Group (NPG)**, derived from and subordinate to the NDAC, has eight members, and is intended to go further into the details of topics raised there. The members in June 1971 were Britain, Canada, Germany, Italy, the Netherlands, Norway, Turkey, and the United States (Belgium, Denmark, and Greece had participated earlier). The Secretary-General also chairs the NPG. The Council's military advisers are the **Military Committee** which gives policy direction to the NATO military commands. The Military Committee consists of the Chiefs of Staff of all member countries, except France, which maintains a liaison staff, and Iceland, which is not represented; in permanent session, the Chiefs of Staff are represented by Military Representatives who are located in Brussels together with the Council. The Military Committee has an independent Chairman and is served by an integrated, international military staff. The major NATO commanders are responsible to the Military Committee, although they also have direct access to the Council and heads of governments.

PRINCIPAL COMMANDS:—The Principal Military Commands of NATO are **Allied Command Europe (ACE)**, **Allied Command Atlantic (ACLANT)** and **Allied Command Channel (ACCHAN)**. The NATO European and Atlantic Commands participate in the Joint Strategic Planning System at Omaha, Neb., but there is no Alliance Command specifically covering strategic nuclear forces. As for ballistic-missile submarines the United States has committed a small number and Britain all hers to the planning control of SACEUR, and the United States a larger number to SACLAN. The Supreme Allied Commander Europe (SACEUR) and the Supreme Allied Commander Atlantic (SACLANT) have always been American Officers; and the Commander in Chief Channel (CINCHAN) and Deputy SACEUR and Deputy SACLANT British. SACEUR is also Commander-in-Chief of the United States Forces in Europe.

ALLIED COMMAND EUROPE (ACE):—Allied Command Europe has its headquarters, known as SHAPE (Supreme Headquarters, Allied Powers in Europe), at Casteau, near Mons, in Belgium. It is responsible for the defence of all NATO territory in Europe, excluding Britain, France, Iceland, Portugal, and all of Turkey. It also has general responsibility for the air defence of Britain. The European Command has some 7,000 tactical nuclear warheads in its area. There is a very wide range in the kiloton spectrum. The number of delivery vehicles (aircraft, missiles and howitzers) is about 2,250, spread among all countries, excluding Luxembourg. The nuclear explosives themselves, however, are maintained in American custody. Tactical nuclear bombs and missile warheads are all fission. The average yield of the bombs stockpiled in Europe for the use of NATO tactical aircraft is about 100 kilotons, and of the missile warheads, twenty kilotons. About sixty division equivalents are available to SACEUR in peacetime. The command has some 2,900 tactical aircraft, based on about 150 standard NATO airfields and backed up by a system of jointly financed storage depots, fuel pipelines, and signal communications. The majority of the land and air forces stationed in the Command are assigned to SACEUR while the naval forces are earmarked. **The Second French Corps** of two divisions (which is not integrated in NATO forces) is stationed in Ger-

BHARAT INSULATION COMPANY

B. I. C.

THE ONLY PLANT OF ITS KIND IN INDIA
EQUIPPED WITH THE LATEST HYPERSEN-
SITIVE ELECTRONIC CONTROLS FOR THE
MANUFACTURE OF SUPER ENAMELLED
COPPER WIRE :

OUR RANGE INCLUDES

**14 SWG to 29 SWG OF THE
FOLLOWING :—**

- * Easter-Amide-Imide Wires with higher polyimide contents to withstand Heat Shock Temperature of the Range of 250°C.
- * Modified Polyvinyl Wires for use in Chemical|Refrigeration|Humid| Oil Filled Transformer.
- * Polyester Wires for Motor|Air Cooled Transformer|Chokes|Relay Coils etc.

**ADMINISTRATIVE
OFFICE & WORKS :
B-32. WAGLE INDUSTRIAL ESTATE
ROAD No. 18, THANA-4.**

||| **TELEX : BIC BY
011-2685
PHONE: 593911
GRAM: BIC: THANA**

FOR NORTHERN INDIA: PLEASE CONTACT OUR DELHI OFFICE

**BHARAT INSULATION COMPANY
MALHOTRA BHAVAN, GROUND FLOOR,
4653/21, ANSARI ROAD, DARYAGANJ,
DELHI-6.**

PHONE: 275518

Grams: 'BINSULAC'

many under a status agreement reached between the French and German governments. Cooperation with NATO forces and commands has been agreed between the commanders concerned. **The ACE Mobile Force (AMF)** has been formed as a NATO force with particular reference to the northern or south-eastern flanks. Formed by eight countries, it consists of eight infantry battalion groups, an armed reconnaissance squadrons, and ground-support fighter squadrons, but has no air transport of its own. The following commands are subordinate to Allied Command Europe:—

(a) **Allied Forces Central Europe (AFCENT)** has command of both the land forces and the air forces in the Central European sector. Its headquarters are at Brunssum, Netherlands, and its commander (CINCENT) is a German General. The forces of the Central European Command include twenty-one divisions assigned by Belgium, Britain, Canada, West Germany, the Netherlands, and the United States and about 1,700 tactical aircraft. The Command is subdivided into Northern Army Group (NORTHAG) and Central Army Group (CENTAG), NORTHAG, responsible for the defence of the sector north of the Gottingen-Liege axis, includes the Belgian, British, and Dutch divisions, four German divisions and is supported by Second Allied Tactical Airforce (ATAF), composed of Belgium, British, Dutch and German units. The American forces, seven German divisions, and the Canadian battle group are under the Central Army Group supported by Fourth ATAF, which includes American German and Canadian units, and an American Army Air Defence Command. (b) **Allied Forces Northern Europe (AFNORTH)** has its headquarters at Kolsaas, Norway, and is responsible for the defence of Denmark, Norway, Schleswig-Holstein, and the Baltic approaches. The commander has always been a British General. Most of the Danish and Norwegian land, sea and tactical air forces are earmarked for it, and most of their active reserves assigned to it. Germany has assigned one division, two combat air wings and her Baltic fleet. (c) **Allied Forces Southern Europe (AFSOUTH)** has its headquarters at Naples, and its commander (CINCSOUTH) has always been an American admiral. It is responsible for the defence of Italy, Greece and Turkey and for safeguarding communications in the Mediterranean and the Turkish territorial waters of the Black Sea. The formations available include fourteen divisions from Turkey, twelve from Greece and seven from Italy, as well as the tactical air forces of these countries. Other formations from these three countries have been earmarked for AFSOUTH as have the United States Sixth Fleet, and naval forces of Greece, Italy, Turkey and Britain. The ground-defence system is based on two separate commands; southern comprising Italy and the approaches to it, under an Italian commander and South-eastern, comprising Greece and Turkey, under an American commander. There is, however, an overall air command and there is a single naval command (NAVSOUTH), responsible to AFSOUTH, with its Headquarters in Malta. A special air surveillance unit-Maritime Air Forces Mediterranean (MARAIMED) is now operating Italian, British and American patrol aircraft from bases in Greece, Turkey, Sicily, Malta and Italy, French aircraft are participating in these operations. Its commander, an American Rear Admiral, is immediately responsible to CINCSOUTH. The Allied On-Call Naval forces for the Mediterranean (NAVOCFORMED) has consisted of at least three destroyers contributed by Italy, Britain, and the United States, and three smaller ships provided by other Mediterranean countries, depending upon the area of operation.

ALLIED COMMAND ATLANTIC (ACLANT):—Allied Command Atlantic has its headquarters to Norfolk, Va, and is responsible for the North Atlantic area from the North Pole to the Tropic of Cancer, including Portuguese coastal waters. In the event of war, its duties are to participate in the strategic strike and to protect sea communications. There are no forces assigned to the command in peacetime except Standing Naval Force Atlantic (STANAVFORLANT), which normally consists, at any one time, of four destroyer-type ships. However, for training purposes and in the event of war, forces, which are predominantly naval, are earmarked for assignment by Britain, Canada, Denmark, Netherlands, Portugal and the United States. There are arrangements for co-operation between French naval forces and those of SACLANT. There are five subordinate commands: **Western Atlantic Command, Eastern Atlantic Command, Iberian Atlantic Command, Striking Fleet Atlantic, and Submarine Command.** The nucleus of the Striking Fleet Atlantic has been provided by the American Second Fleet with up to six attack carriers; their nuclear role is shared with the missile-firing submarines.

ALLIED COMMAND CHANNEL (ACCHAN):—Allied Command Channel has its headquarters at Northwood near London. The wartime role of Channel Command is to exercise control of the English Channel and the southern North Sea. Many of the smaller warships of Belgium, Britain and the Netherlands are earmarked for this Command, as are some maritime aircraft. There are arrangements for cooperation with French naval forces.

POLICY:—The political and strategic guidance laid down in 1967 includes the concept of political warning time in a crisis, and the possibility of distinguishing between an enemy's military capabilities and his political intentions. The strategic doctrine defined by the DPC in December 1967 envisaged that NATO would meet attacks on its territory with whatever force levels were appropriate. In June 1968, at the Ministerial Meeting at Reykjavik, the Council called on the countries of the Warsaw Pact to join in discussions of mutual force reductions, reciprocal and balanced in scope and timing, and repeated this invitation at their meeting in Rome in 1970.

HERE IS THE BOOK

FOR EVERY PATRIOTIC INDIAN

DISTINGUISHED SOLDIER SONS OF INDIA

**... BEING A PICTORIAL AND "CITATION"
RECORD OF MILITARY AWARD WINNERS
1947-72**

Compiled and Edited by Jaswant Singh

pp. 700

Postage etc. Extra

Price Rs. 50/-

INCAB

Keeps Pace With The
Growing Demands Of
Country's Defence Department
By Developing And Supplying
All Types Of Cables



INCAB

THE INDIAN CABLE COMPANY LIMITED

Quality Cablemakers - First and Foremost

NATO COUNTRIES

GREAT BRITAIN

UNITED KINGDOM is an original member of the Atlantic alliance. British commitment to NATO as well as her continuing support for CENTO and SEATO have been reaffirmed vide October Supplementary White Paper and in the February, 71, Statement of Defence Estimates. The statement has conceded that 'Western security remains under the threat of the vast military resources of the Soviet Union, but its growing strategic nuclear capability, its large modern conventional forces, and its rapidly expanding navy and merchant marine, the Soviet Union is engaged in enhancing its power and influence across the world at the expense of Western political interests, at risk to Western economic interests and competition with China'.

The White Paper explains that the two most pressing problems of the RAF are in tactical strike and reconnaissance capability and a general shortage of modern front-line aircraft, both combat and support. The RAF is currently equipped with obsolescent aircraft of 1950 vintage and small number of highly modern aircraft, of which **VTOL Harrier** is the best example. The old aircraft have reached the end of their life span and new aircraft are too expensive to be procured in the necessary number. Thus the RAF has to rely on its **160 Phantoms, ninety Harriers** and **Thirty five Buccaneers** for tactical strike until the MRCA... The **European Multi-role Aircraft** becomes available in the late 1970s. The RAF is slated to receive about 400 of these highly advanced fighters. Since the presently available strike force of roughly 300 aircraft cannot possibly satisfy world-wide needs of the RAF, it has been decided to introduce a stop-gap measure of the use of **Anglo-French Jaguar supersonic strike trainer** to increase RAF's close support force. As a result of a sudden realisation that Jaguar is no mean package, the RAF have decided it as too good as a mere trainer and have urgently cast around for a new Gnat—replacement. Latest reports suggest that the British buy has been reshaped from 110 trainers and 90 single seaters to 36 dual-control machines used solely as conversion trainers for 164 striker, striker fighters, enough for four extra squadrons.

THE GENERAL PURPOSE FORCES:—The General Purpose Forces of the Royal Air Force, constituted and deployed as they are today, have the following role to play: (a) **Air Defence, ground attack and fighter reconnaissance.** The role of fighter squadrons deployed in the UK and the Federal Republic of Germany, and assigned to NATO, is to contribute to the air defence of Western Europe against the threat of manned aircraft in a general war. In addition, fighter squadrons, surface-to-air missiles and their ground radar based in the UK, are assigned the task of giving the earliest possible warning of the enemy attack by manned aircraft or missiles. The main role of the ground attack aircraft is to give close support to the Army and the Fighter Reconnaissance aircraft are based overseas for short-range, low level operations in support of ground forces. (b) **Light Bomber and Tactical Reconnaissance.** The role of these forces is to carry operations in support of Treaty obligations and national contingency plans. Squadrons are provided to NATO as a part of the shield

forces and their primary role is nuclear strike. However, they can also use conventional weapons to meet national requirements outside the NATO. The role of strategic reconnaissance force is to undertake reconnaissance for all the three Services in support of Treaty obligations and certain aerial survey tasks. **(c) Maritime Reconnaissance,** In peace, the role of these forces is the reconnaissance and surveillance of sea areas vital to the interest of the United Kingdom and Commonwealth. In time of war, their role is to give anti-submarine protection to surface forces and shipping, either under national plans or in fulfilment of Treaty obligations. **(d) General Support Forces:** The role of these forces is to back up air defence strike and reconnaissance and maritime forces world wide. **(e) Air Mobility Forces:** These forces are made up of the strategic forces, the tactical transport forces, the tanker forces, communications aircraft Headquarters and bases in the UK and overseas. The role of these forces is to move men and equipment of all three Services as quickly as possible when reinforcements are required in other theaters and support them operationally.

PRESENT STRENGTH:—As at present the British Air Force has a strength of 111,000 personnel with 500 combat aircraft organised into 8 medium bomber squadrons with Vulcan, 2 light bomber squadrons with Canberras with Harrier, 9 air defence squadrons with Lightning, 1 air defence squadrons, with F-4M, 1 ground attack squadron with Hunter, 4 close support squadrons with Harrier, 9 air defence squadrons with Lightning, 1 air defence squadron with F-4K, 1 reconnaissance squadron with Victor IIs, 4 reconnaissance squadrons with Canberra, 2 maritime patrol squadrons with Nimrod, 6 maritime patrol squadrons with Shackleton (A combat squadron has 6-12 aircraft in a British squadron). 3 tanker squadrons with Victor, 4 strategic transport squadrons with VC-10, Belfast and Britannia, 8 tactical squadrons with Hercules and Afrosy, 2 light communication squadrons with Andover, 7 helicopter squadrons with Wessex and Whirlwind (SA-330 Puma are entering service). There are 11 ground defence and AD squadrons of the Royal Air Force Regiment some with Bloodhound and Tigercast SAM, and L-40/70 AA guns (Rapier SAM are being introduced).

ORGANISATION AND DEPLOYMENT:—As at present, Royal Air Forces is organised into; Strike Command, Support Command, Transport Force, RAF Germany, Far East Air Force, Air Force Gulf, Near East Air Force, Cyprus and Malta. Under the Strike Command there are, No. 1 (Bomber) Group having Vulcan aircraft committed to Strike/attack role and Victor, Canberra committed to reconnaissance role and Buccaneer aircraft committed to Strike attack role. No. 11 Group having Lightning and Phantom FG-1 committed to Air Defence role: No. 18 Maritime Group having Shackleton and Nimrod aircraft committed to L/R maritime reconnaissance and No. 90 (Signals). Under the Support Command there is No. 38 Group having Phantom FGE-2 committed to Attack and all weather reconnaissance and Harrier committed to close support and reconnaissance. Under the Transport Force there are VC 10, Comet, Belfast and Britannia aircraft committed to Strategic Transport role and Hercules, Agrosy, Andover, Wessex and Whirlwind committed to Tactical Transport role. RAF Germany has Canberra, Buccaneer, Phantom and Harrier committed to Strike/attack and reconnaissance, Close support and reconnaissance roles. Lightning, committed to Air defence, Wessex committed to Army Support and Bloodhound and Lt. AA Guns committed to Airfield defence role. The Far East Air Force has lightning committed to Air defence role and Shackleton com-

mitted to L/R maritime reconnaissance role. **Air Force Gulf** has Hunters committed to Ground attack role and Shackleton committed to L/R maritime reconnaissance role. **Near East Air Force**, Cyprus has Vulcan, lightning and bloodhound aircraft committed to strike, Air defence and Airfield defence roles, Malta with Canberra committed to Reconnaissance and Shackleton to L/R maritime reconnaissance roles (Shackletons are to be replaced by Nimrods). Air Mobility Forces comprise, Transport Force of Air Support Command, Tanker force (Victors) of Strike Command, which provides operational support as necessary for all RAF combat aircraft.

FRENCH AIR FORCE

LARMÉE de L'Air, as an independent force, was officially born in 1934, when it was the biggest Air Force in Europe. However, France suffered a disastrous defeat and L'Armée de L'Air ceased to exist as a factor of any importance, except in operations subordinate to German Luftwaffe. In 1940, General De Gaulle issued his famous appeal to fight on the allied side. In consequence, the Forces Aériennes Françaises Libres was formed. In the course of time, it became a sizeable force acquiring British and American aircraft. After the close of the war, L'Armée de L'Air was reorganised and progressively re-equipped with aircraft of indigenous manufacture, although some aircraft were acquired from the United States of America under the NATO and L'Armée de L'Air became an independent instrument of air defence of French National territories and overseas interests.

As on December, 31, 1971, the French Air Force had a total strength of 104,000 personnel and 500 combat aircraft and was organised into: **Air Defence Command (CAFDA)** had three interceptor squadrons with Mirage IIICs; two all-weather fighter interceptor squadrons with Vautour IINs; three interceptor squadrons with Super-Mystère B2s (co-ordination was by the automatic STRIDA II air defence system) (b) **Tactical Air Force (FACTAC)** had two subordinate Tactical Air Commands—First CATAC and Second CATAC—and included: eight fighter-bomber squadrons with Mirage IIISs; one fighter-bomber squadron with Mirage IIIBs; two fighter-bomber squadrons with F-100Ds; two fighter-bomber squadrons with Mystère IVAs; three tactical reconnaissance squadrons with Mirage III RDs. **Air Transport Command (COTAM)** had three tactical transport squadrons with Transalls; four tactical transport squadrons with Nortalas; one heavy transport squadron with DC-6 and BR-765 Saharas and two mixed transport squadrons; four squadrons with H-34 and Alouette II helicopters.

GREECE

AFTER World War II, and the subsequent civil war, the RGAF was progressively modernised under the Mutual Air Defence Programme beginning in 1952 when Greece joined NATO. Following is the Known Air Power of Greece as on December 31, 71. Total strength: 23,000, personnel and 216 combat aircraft, organised into 3 fighter-bomber squadrons with F-84F, 2 fighter-bomber squadrons with F-104G, 4 interceptor squadrons with F-FA, 1 interceptor squadron with F-120A, 1 photo-reconnaissance squadron with RF-5, 1 photo-reconnaissance squadron with RF-84F (A combat squadron has up to 18 aircraft), 30 C-47 and C-119G and 25 Noratlas transports aircraft, 1 helicopter squadron with 12 H-19 and 6 AB-205, 1 helicopter squadron with 10 Bell 47G, 1 SAM battalion with Nike-Hercules.

ITALY

ITALY signed the North Atlantic Pact in 1949 and the entire force, which began to be modernised with US aircraft, was integrated with NATO network. The increasing integration of Italian forces was later reflected by the formation of Joint Segreariato for the three branches under the Ministero della Difesa. As on December, 31, 71 the total strength of Italian Air Force was 74,000 personnel and 300 combat aircraft organised into **3 fighter-squadrons** with F-104G, **1 fighter-bomber squadron** with G-91Y, **1 fighter-bomber squadron** with F-84F, **4 light attack squadrons** with G-91R, **4 AWW squadrons** with F-104G, **2 AWW squadrons** with F-104S, **1 AWW squadron** with F-86K, **3 reconnaissance squadrons** with RF-84s and RF-104, **3 transport squadrons** with C-119s (delivery of 14 C-130E Hercules was due in 1971), **1 transport squadron** with C-47s, Convair 440s and DC-6s (A combat squadron (groups has 12-18 aircraft, and a transport squadron 16), **6 SAM groups** with Nike-Hercules.

CANADA

CANADA is a NATO alliance Country. Total strength as on December, 31, 71 was 37,000 personnel and 162 combat aircraft. **IN CANADA: Mobile Command:** 2 CF-5 Tactical fighter squadrons, 6 helicopter squadrons, **Air Defence Command:** 3 interceptor squadrons with GR-101s (Due to be replaced in 1971 by F-101C), 2 SAM squadrons with Bomar Bs; CB 28 Surveillance and control radar squadrons (They were assigned to NORAD), 1 CF-100 electronic warfare training squadron. **Air Transport Command:** 1 squadron with Boeing 707-320 C transport/tankers, 2 squadrons with C-130 Hercules, 2 squadrons with CC-115 Buffaloes and CC-138 Twin Otters, 2 squadrons with Buffalo, and CH-113 Labrador helicopters, 1 squadrons with CC-106 Yukons, 1 squadron with CC-109 Cosmopolitan and Falcons. **In Europe:** 2 strike-attack and 1 reconnaissance squadrons, with CF-104s (A squadron have 6-18 aircraft). Reserves: 800.

PORTUGAL:

PORTUGAL is a member of the Atlantic Alliance (NATO). Portugal joined NATO in 1951, and in the following year the Army Air Navy and services were unified in the **Força Aerea Portuguesa**. Following was the known air-power as on December, 31, 71. Total strength: 21,000 personnel with 150 combat aircraft organised into **2 light bombers squadrons** with B-26 Invaders and PV-2s, **1 fighter-bomber squadron** with F-84G, **2 light-strike squadron** with G-91, **1 interceptor squadron** with F-86F, **6 COIN flights** with armed T-6, **1 maritime patrol squadron** with P-2 V5s, (A combat squadron has 10-25 aircraft), 22 Noratlas, 16 C-47, 11 DC-6 and 15 C-45 transports, 13 T-33, 25 T-37 and 35 T-6 reconnaissance/trainers. Other aircraft included 11 DO-27 and about 85 Alouette II/III and SA-330 Puma helicopters: 1 parachute regiment of 4,000.

BELGIUM:

THE Belgian Air Force originated in an Army Balloon, Company in 1910. In 1925, it was re-named L'Aeronautique Militaire and remained part of the Army. 1940, a few Belgian pilots escaped to Britain. Two fighter squadrons operated by Belgian personnel with the RAF, together with about 1000 others were the nucleus of the **Force Aerienne Belge** formed in 1946. The FAB has, remained under a re-organisation and re-equipment programme to re-shape operational strength by 1970. The latest known strength of Belgian Air Force is 20,000 personnel with 175 combat aircraft organised into **2 fighter-bomber squadrons** with F-84F, **2 fighter-bomber squadrons** with F-84F, two all-weather fighter squadrons with F-104 Gs; **1 reconnaissance squadron** with RF-84F (are being replaced by Mirage VB) (A combat squadron has 18-25 aircraft), 33 C-119 and 18 C-47, Pembroke and DC-6 transport 11 HSS-1 helicopters, **8 SAM squadrons** with Nike-Hercules.

DENMARK

THE RDAF, is a small tactical force fully committed to Allied Air Forces Baltic Approaches of NATO, but with conventional armament, since Danish Government has continued to oppose Nuclear Weapons. The following was known strength of the Air Force as on December, 31, 1971; 10,000 personnel with 112 combat aircraft organised into **1 fighter-bomber squadron** with F-35 XD Drakan, **2 fighter-bomber squadrons** with F-100D/Fs **2 interceptor squadrons** with F-104Gs **1 interceptor squadron** with Hunter, **1 reconnaissance squadron** with RF-84F, (converting to RF-35 Darkens during 1971) (A combat squadron has 16 aircraft), **1 transport squadron** with C-47 and C-54 **1 SAR squadron** with S-61 helicopters, **4 SAM squadrons** with Nike-Hercules, **4 SAM squadrons** with HAWK.

NORWAY

NORWAY is a member of the Atlantic Alliance (NATO) with Denmark. Norway now forms Northern Command of NATO and is divided into two Air Commands; **Luftkommando Sor Norge** and **LK Nord-Norge**, each with its own HQ and operational control. Following was the known Air Power of Norway as on December, 31, 1971. Total strength: 9,400 personnel and 121 combat aircraft organised into **5 light attack squadrons** each with 16-F5A, **1 AWX fighter squadron** with 20 F-104G, **1 photo-reconnaissance squadron** with 16 RF-3A, **1 maritime patrol squadron** with 1 P-3B, **1 transports squadron** with 6 C-130 and 4 C-47, **2 helicopter squadrons** with UH-1, 4 SAM batteries with Nike-Hercules. Reserves 10,600 personnel providing 12 airfield defence light AA battalions.

NETHERLANDS.

AFTER the cessation of hostilities in Europe, a Dutch Air Force Directorate was formed in 1947. An Air Force Staff came into being to integrate Dutch Military Aviation activities both in the Netherlands and in the Far East. The latter commitment ceased with the foundation of the Indonesian Republic.

in 1949. In 1950, steps were taken for the formation of R-Neth. A.F. and this took place in 1951. The Netherlands then joined NATO and the R. NETH. A.F. 9 started an urgent modernisation programme with American and British jet aircraft predominating. Main strike element was **Tactical Air Command, integrated with No. 1 Tactical Operation Centre of NATO's and 2nd ATAF and comprising four fighters bomber squadrons. Interceptor units in Air Defence Command Taklishchee (CLV) comprised four squadrons.** The RNAF also controlled the only USAF unit under foreign command, the 32nd Fighter. Interceptor Squadrons. In October, 1961, First Guided Weapons Group (No. IGGW). RNAF, became operational with Nike-Ajax and Hercules missile operated by four squadrons). Following was the latest known Air Power of Netherlands as on December, 31, 1971. Total strength: 21,500 with 126 combat aircraft consisting of **2 fighter bomber squadrons with F-104G, 2 fighter-bomber squadrons with NF-5A, 2 interceptor squadrons with F-104G, 1 photo-reconnaissance squadron with RF-104G (A combat squadron had 18 aircraft), 1 transport squadron with F-27, 3 observation and communication squadrons under army command, with Alouette III helicopters, and Super-Cub and Beaver light aircraft, 8SAM squadrons with Nike-Hercules, 9 SAM squadrons, with Hawks.**

TURKEY

TURKEY is a NATO Alliance Country. Following is the known Air Power of Turkey. Total Strength: 50,000 personnel with 360 combat aircraft, **2 fighter-bomber squadrons with F-104G, 4 fighter-bomber squadrons with F-100, 4 fighter-bomber squadrons with F-5, 4 interceptor squadrons with F-5, 2 interceptor squadrons with F-86. (in store), 2 AWX squadrons with F-102A, 2 reconnaissance squadrons with RF-84F (a combat squadron has 10-25 aircraft), 4 transport squadrons with 50 C-47, 3 C-54 and 5 C-130, 2 SAM battalions (6 batteries) with Nike-Hercules.**

ANSONS ELECTRO MECHANICAL WORKS

248-252, ABDUL REHMAN STREET, BOMBAY-3

Phone : 324764

Grams : "GUIDANCE"

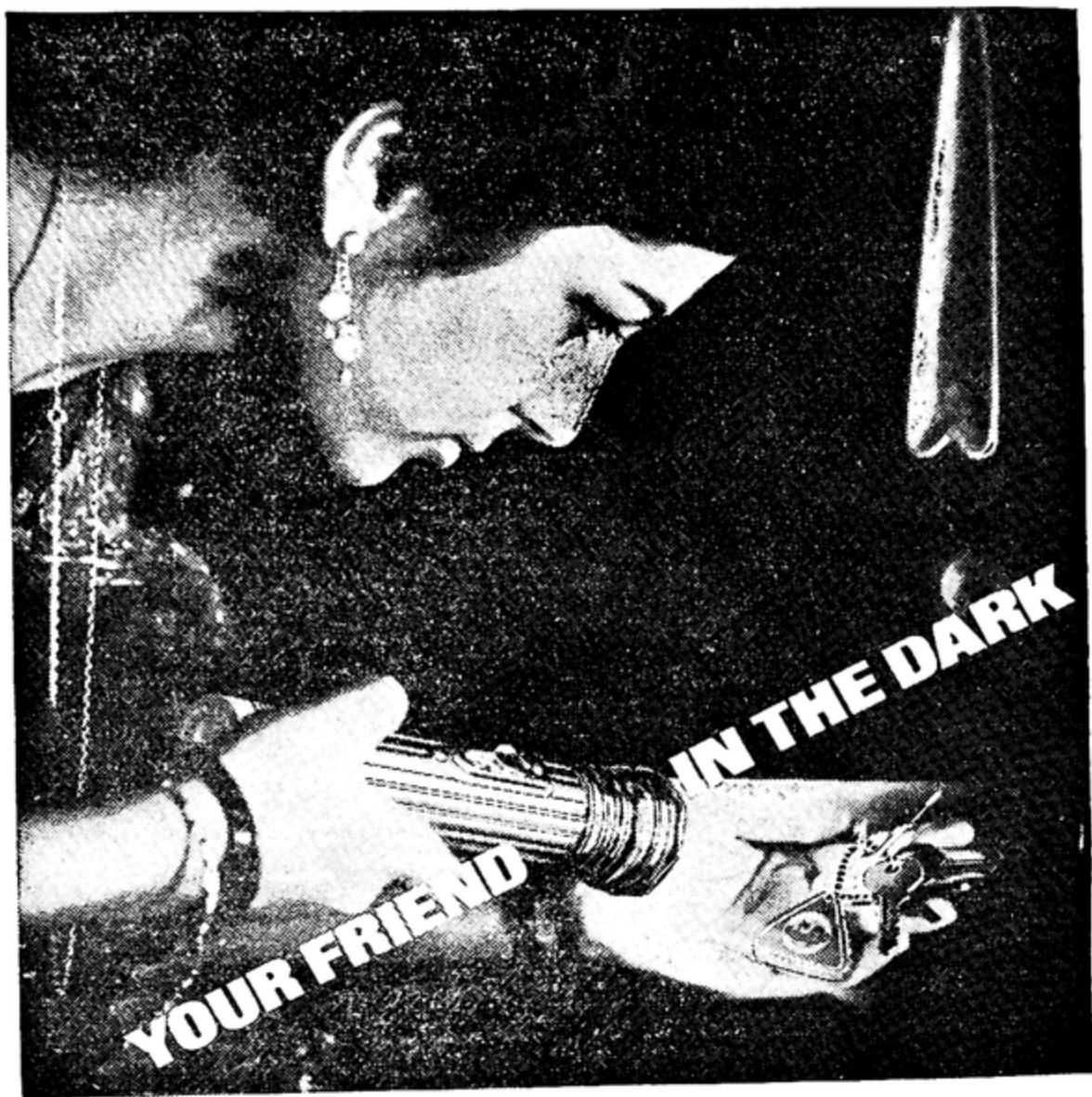
MANUFACTURERS OF

ELECTRIC MOTORS AND APPLIANCES

FACTORY AT :

**AGADI INDUSTRIAL ESTATE,
SUBHASH ROAD, KHOT ROAD,
JOGESHWARI ESTATE, BOMBAY-60 (NS)**

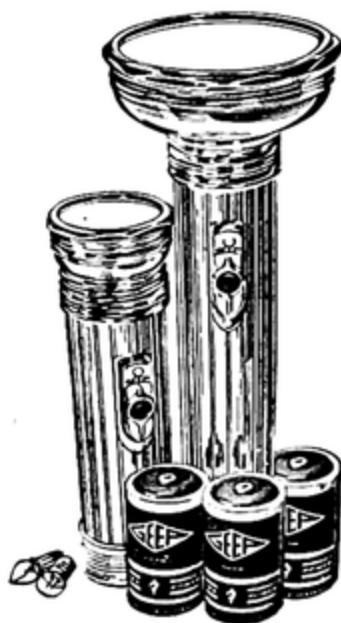
Phone : 576503



Whether you're searching for your keys,
fixing a fuse or checking a puncture.....
nothing can help you like a **GEEP** flashlight.
Behind its perfect light is the power of
GEEP cells and **GEEP** bulb.
Compare it with any other. Its switch.
Its focussing. Its sturdiness. You'll
find **GEEP** the best.
Always buy **GEEP** flashlights with Geep
bulbs and cells.



SYMBOL OF QUALITY



SOVIET UNION

ACCORDING to the Soviet military leaders, their country did not only emerge from the war victorious but also stronger militarily than ever before. At the close of the war, the Red Armed Forces were claimed to be the mightiest in the world, equipped with the most up-to-date weapons. Their morale was also claimed to be extremely high. However, the Soviet Communist Party and the Soviet Government did not decide to rest on the laurels of victory. On the contrary, it impressed upon the people most forcefully that having gone over to peaceful labour they should, nevertheless, be constantly on guard and uphold the Armed Forces and the nation's defence capability. This was urgent and immediate because the "Western Imperialist countries" had already begun revitalising all the aggressive anti-Soviet fascist forces which had escaped destruction. In these circumstances, the Communist Party and the Soviet Government set the Armed Forces several new tasks. They were required to be in constant combat readiness, to elaborate fundamental problems of Soviet military science and technology; to carry on combat training and political education in accordance with the requirements of modern warfare, vigilantly guard the Soviet people's peaceful creative labour and firmly uphold the Soviet Unions interests.

THE FOURTH FIVE YEAR PLAN:—In March, 1946 the Supreme Soviet endorsed the Fourth Five Year Plan for the rehabilitation and development of the national economy for years 1946-50. As a result of the people's heroic efforts, industry and agriculture were able to surpass the pre-war level by 1948. The period between 1946 and 1952 saw important and far-reaching developments of the Armed Forces and conduct of operations and all arms combat, elaborated on the basis of the study and analysis of the experience gained in the war. Special importance was attached to the harmonious development of all fighting. Changes were also introduced in artillery particularly in rocket artillery. The changed conditions and methods of warfare demanded the further enhancement of the operational, tactical and technical training of the command personnel, particularly when they had to be prepared to engage a powerful, well armed enemy, possessing large technological and industrial reserves. The system of training was improved accordingly.

GROUND FORCES:—The rearmament of the Soviet armed forces had to be carried as quickly as possible because of "the mounting threats posed by the US and the UK. The development of small arms in the Soviet Union was characterised by the creation of new types of light self-loading rifles (carbines), sub-machine guns, light and mounted machine guns. The new armament made it possible for infantry to attain high small-arms fire density at ranges of upto 1,000 meters and put out of action enemy armoured troop carriers, automobiles and anti-tank crews. The ground forces were fully motorised. Their mobility could match armoured troops. They could carry on mobile combat operations at high speeds twice the depth of the operations during World War II. Great changes were also introduced in artillery particularly in rocket artillery. The famous Katyusha rocket launchers were replaced by modernised installations and new rocket launchers of longer range were inducted into the service. The anti-aircraft artillery was armed with new 57 and 100 mm guns

and a modernised 85 mm guns possessing high altitude range of fire. All these innovations and inductions enabled the troops to keep under effective artillery fire the whole depth of the enemy's tactical defence zone, provide effective support to second echelons and reserves committed to action, assist them in occupying the second defence line and intermediate positions in stride and effectively combat enemy artillery. Equally important changes took place in the armament of armoured troops. Apart from the new T-54 medium tank, armoured troop carriers and self-propelled anti-aircraft artillery, mounts were built for the mechanised troops. These systems possessed much better characteristics than the corresponding wartime models. The specialist troops also underwent considerable changes. Particularly noteworthy was the provision of new means of chemical defence to the Chemical troops.

AIR FORCE:—In the Air Force, jet aircraft began to take over, ushering a new qualitative change in the Service. New MiG-15 and MiG-17, LA-15, YAK-17 and YAK-23 had speeds of over 1,000 kilometers an hour. They also possessed much greater range, service ceiling and rate of climb. The legendary IL-2 and IL-10 attack aircraft were replaced by the jet MiG-15 with more than double the speed and range. In 1948, the new IL-28 bombers were put into service with double the speed and range and triple the bomb load of a piston engine bombers. IL-28 also had more powerful gun armament. In transport aviation, the IL-12, IL-14 aircraft and MI-L and M-4 helicopters were introduced. The universal introduction of jet propulsion gave the Air Force the speed and flight altitudes, quicker rates of climb to combat altitude, greater bomb loads and endurance and range. Airplanes were also equipped with radar sights, identification means and powerful wireless sets capable of maintaining communication with friendly bases all through the flight. As a result of all these innovations the Soviet Air Force achieved the highest standards of efficiency enabling it to carry out any assignments.

The National Air Defence Forces also underwent radical renovation. In 1948, they were made into a separate armed service. New types of aircraft and anti-aircraft artillery were introduced. In early fifties, the service began to receive surface to air guided missiles. The observation warning and communication service was provided with powerful radar stations for detecting enemy aircraft and guiding friendly planes to targets. All this contributed to the steady enhancement of air defence capability, ensuring the repelling of any enemy air attack and the reliable protection of the national territory and of the armed forces. **The Airborne troops** also advanced enormously in their development. In June, 1946, they were detached from the Air Force and subordinated directly to the Minister of Defence. The office of Commander-in-Chief of Airborne Troops was created. Parachute and air-landing units were formed on the basis of several infantry divisions. They were provided with new automatic small arms, artillery, mortars, anti-tank and anti-aircraft means. They received ASU-57 self-propelled guns and 120 mm mortars. Heavy gliders and cargo parachutes were designed specially for airborne landings and new types of transport aircraft and helicopters were introduced.

TRAINING AND EDUCATION:—The development of the art of war in the Soviet Armed Forces was inseparably linked with intense day to day combat training and Party political work. The experience of the war had revealed that those units gained victory faster whose men possessed greater fighting efficiency and higher morale. It was considered essential that these qualities be continu-

ously enhanced in peace time. The Ministry of Defence, therefore, gave serious consideration to these questions. Special concern was devoted to the improvement and further training of the officer corps. It was considered necessary to retain officers with greater experience and high military skills while at the same time cause a steady and consistent rejuvenation of the corps. The armed forces, it was thought, needed people capable of carrying out any assignment in the most difficult conditions. The education and training of command personnel was based on the fundamental premise that **a Soviet officer was a promoter of the party's policies in the troops, leader of the combat training and political education, organiser of combat and educator of his subordinates.** The history of war had taught that the equipment of the armed forces with the best of weapons was itself not sufficient to make the armed forces completely battle worthy. The armed forces, it was thought, became truly battle worthy only if all units were headed by officers capable of organising the comprehensive combat training and political education of their men and ably leading them in battle. It was further considered essential that for an officer to be capable of successfully teaching and training his subordinates, he himself must be well educated and have broad political, technological and cultural outlook... He must himself never stop studying. The training of officers was mainly the responsibility of higher and secondary military educational establishments. To carry on this task more successfully, the whole system of military, political and technological education was revised. Steps were taken to staff military educational establishments with skilled instructors. In addition to the existing military academies and schools, there existed a system of advanced training and refresher courses for officers. They were made more effective as a result of which the Soviet Armed Forces did not experience any serious shortage of officers of any rank or speciality.

THE NEW PHASE: NUCLEAR MISSILES :—Towards the end of 1953, the Soviet Armed Forces entered a new period in their development. It was a time when nuclear weapons and missiles of all classes were set to be introduced. Undoubtedly, the appearance of entirely new means of combat had a far reaching effect on the armed forces and military science. It became necessary to revise theoretical views concerning the nature of future warfare and elaborate new forms and methods of conducting operations in conditions involving the use of mass destruction weapons. Soviet science and technology was not found wanting. The rearmament of the Soviet Armed Forces with missiles and nuclear weapons was begun at the end of 1953. The achievements in equipping the Armed Forces with the most up-to-date weapons were made possible by the **'heroic, selfless labour of the working class and collective peasantry, by the efforts of scientists and engineers, by the successful implementation of the economic plans'**. They performed a revolution in methods of warfare. The revolution embraced the sum total of radical changes in the means of armed struggle, in the methods of conducting combat operations, in the organisation of the Arms and Services, in the methods of training and educating the personnel. The rearmament programme was completed by October, 1961 when it was claimed that, **'atomic and nuclear weapons constituted the basis of the Soviet Armed Forces fire and striking power, the principal means of their delivery to targets were missiles capable of covering vast distances in short time and dealing devastating blows at the enemy. As a consequence of this rearmament, a new armed service appeared... the Strategic Rocket Forces.**

When nuclear weapons first appeared they were developed as a means of strategic warfare and nuclear charges were accordingly produced in the shape



**WE
SALUTE**

**ALL OFFICERS
AND MEN OF
OUR GALLANT
ARMED FORCES**

**OUR SERVICES
FOR THEIR GREATER
MORALE**

**AND
PLEDGE**



K. WORAH & CO. PRIVATE LIMITED
DARABSHW HOUSE, BELLARD ROAD,
BOMBAY-1.

of high yielding atomic bombs. Then was begun the manufacture and testing of low yield nuclear charges. This marked the beginning of the development of tactical nuclear weapons which could be used in the immediate vicinity of friendly troops on the battle field. The further development of nuclear weapons followed the course of creating charges of a wide variety of types and yields. Another important step in the revolution in warfare was the use of missiles as the most efficient carriers of nuclear charges. By 1961, there existed a wide range of strategic, operational and tactical missiles. Strategic missiles were capable of striking at an enemy in any part of the globe and destroying his industrial targets, airfields, naval bases, large troop concentrations, road junctions and railway stations.

MILITARY THEORY—NEW APPROACHES:—The rapid development of the means of armed struggle, inevitably influenced profoundly the ways and means of conducting military operations. The tremendous destructive effect of nuclear weapons and the need to provide protection from them necessitated the dispersal of troops on the battlefield. The problems of massing troops and weapons in the attack demanded new approaches. The continuous front line could no longer be used. In the new conditions, small and large units had to operate in separate zones following the principle **"Proceed separately, strike together."** Accordingly, the closest co-ordination of all armed services and fighting arms in carrying out assignments became of special importance. Military theory was required to put forward the task of expanding the scope of operations in the new conditions, increasing the width of the zone of attack, the depth of operations and the rate of attack, simultaneously reducing surprise and camouflage, as well as the time needed to carry out the operations. The role of the time factor, grew tremendously. The far reaching changes in armament and armed forces organisation and methods of fighting imposed high demands on the soldiers. In the war of nuclear and missile weapons, the troops were exposed to much greater destruction... they were subjected to all the lethal effects of nuclear, chemical and biological weapons. Under the circumstances, only men with firm ideological convictions and a highly devoted consciousness of their military duties could hope to retain the will for victory and act with courage, resolve and initiative, displaying fortitude and heroism. **This necessitated the work done by commandes, political bodies, Party and Kossomol organisations being aimed at fostering in every soldier iron discipline, lofty political consciousness, boundless devotion to the country, courage, stamina, heroism, and readiness for self-sacrifice in the name of the people, for the cause of communism.**

NEW MILITARY DOCTRINE:—Soviet view point on military doctrine had all along been that, as the fundamental law of the state in the sphere of national defence, it must be flexible and responding readily to every new development in military science and the practice of armed combat... it must take account of all changes in political relations between states and groups of states with scientific precisions. It was, therefore, in two major aspects that the new doctrine emerged and crystallised itself... **the political and technological.** The political aspect embraced questions of the political purposes of possible wars, the nature of the military tasks in any future war. The technological aspect of the military doctrine was linked with the introduction of atomic and thermonuclear weapons in all the fighting services and arms and the emergence of the missiles as the main means of delivering these weapons to potential targets. With revo-

lutionary changes in the methods of armed struggle and the Soviet military art as a whole, the new Soviet military doctrine as Marshal R. Y. Malinovsky, stated, emerged to be;

"The next war, if the imperialists managed to unleash it, would be a decisive armed conflict between two opposing social systems, according to the character of the weapons employed. It will inevitably be a thermonuclear war, a war in which nuclear weapons would be the principal means of destruction and missiles would be the principal means of delivering weapons on targets. This war would be characterised by an armed struggle of unprecedented ferocity, dynamic, highly mobile combat operations, the absence of continuous stable front lines or distinction between front and rear, greater opportunities for dealing surprise strikes of great strength against both troops and the rear areas of the belligerent countries. The changes that have taken place in the means of the armed combat will effect the very way in which the war will start and it would be decisive for the outcome of the whole struggle. In all probabilities, war will commence suddenly, without the usual menacing period. It will immediately acquire a general, decisive scope. Such a beginning would be the most tempting for an aggressor. A future war would be intercontinental in scope and most destructive in character, resulting in the death of hundreds of millions of people, whole countries would be turned into lifeless desert. But the struggle to victory will not be restricted to nuclear strikes. Hence the war would drag out and require the protracted straining of all armed forces and the nation practically to a breaking point. Naturally the ultimate victory would be achieved only as a result of the joint efforts of all the services and arms involving the participation of mass armies millions strong. The new Soviet doctrine, would require that the Armed Forces, the country, the whole Soviet people be prepared for the eventuality of a nuclear war. From the outset any future war would be dynamic and fluid in character. Hence the task would be to prepare for decisive, large-scale, swift and sudden operations involving all the resources capable of taking the enemy completely by surprise. The new Soviet military doctrine under the circumstances also became truly international in character as serving interests of the whole socialist camp and all progressive mankind and aimed against war-mongers, . . against the enemies of civilisation".

PROUD ACHIEVEMENTS:—By 1962, the Soviet leaders were in a position to claim that due to the strenuous efforts made by the people in the post war years, the Soviet Armed Forces had acquired new traits, distinguishing the new stage in their development from the previous ones. As tools of a people's state, they were of the people in the truest sense of the word, their purpose was to defend, not only the world's first socialist state, but also to serve as the basis for the defence of the whole socialist camp. The need to uphold world peace determined the truly international essence of their task. In accordance with their objectives, the Soviet Armed Forces were organised to remain in constant readiness to go into action. They were structurally and organisationally designed to be up to the standards of modern warfare and Soviet military art and they comprised five services: **The Strategic Rocket Force, the Air Defence Forces, the Ground Forces, the Air Force and the Navy.**

The appearance of intercontinental missiles, which became a powerful means of influencing the course of war as a whole necessitated the creation of an entirely new service. **The Strategic Rocket Forces . . the main service and**

the very basis of Soviet Union's defence capacity. Soviet strategic missiles were claimed to possess a virtually unlimited range. They could carry thermonuclear charges of tremendous yield: they could hit targets with high precision, their flight paths were such as to make nuclear missile strikes sudden and inexorable; they could be used at any time of the day and in any weather. The distance factor lost its former value. A single missile, carrying a powerful nuclear warhead was capable of releasing more energy on exploding than the aggregate energy of all the explosives used in the Second World War. With strategic missiles carrying nuclear warhead, with yields equivalent to 20, 30, 50 and more megatons (million tons) of TNT, only a few hydrogen bombs were needed to wipe out a whole state. Soviet missiles possessed high aiming accuracy and were capable of hitting any target at any distance with the first shot. Furthermore, the missiles possessed a number of other awesome qualities. Complex as they were in design, they were simple in operation, could be prepared for launching quickly and required relatively simple launching pads. Missiles could be launched from well camouflaged field launching sites without preliminary organisation of the terrain or from the mobile launchers. The use of missile launchers enhanced the survivability of missiles, their invulnerability to attack by enemy strategic weapons.

SERVICES COMPONENTS:—Strategic Rocket Forces became the most streamline organisation, with their role and task in the nations systems of defence strictly defined. The Strategic Rocket Forces were not only capable of incapacitating major enemy groupings within the shortest possible time, they could also destroy his major economic centers and disturb the whole system of government and military control. The quality of modern missiles made it possible for them to be employed suddenly and on a mass scale. **The Air Defence Forces** comprised surface-to-air missile troops, missile carrying aircraft, radar and special troops. Their strength relied on qualitatively new fighting arms, surface-to-air missiles and interceptor missile launching aircraft—Soviet scientists evolved means of combating, not only enemy aircraft and winged rockets but missiles as well. The Air Defence Forces were capable, in coordination with the Air Defence Arms of the Ground Forces, Navy and the Armed forces of the **Warsaw Treaty states**, of successfully carrying out their main task of reliably protecting the countries of the socialist community from nuclear strikes or any other enemy means of attack. The supply of new combat means, and especially surface-to-air missiles, contributed to the new qualitative leap in the development of the Soviet Air Defence Forces. **The Anti-aircraft Missile Troops** included units with sophisticated means designed for a variety of interceptors. The latter were capable of bringing down virtually all modern means of air attack at a long range, at high and low altitude. Furthermore, the Air Defence combat equipment was continuously improved. The range for surface-to-air missile was increased at both low and high altitudes and range and rate of fire grew constantly. . . . Already the Air Defence air arm had undergone important changes. . . . It now possessed supersonic missiles carrying interceptors capable of operating at low and high altitudes, including long-range interceptors. These interceptors were capable of destroying winged missiles and carrier aircraft in all weather conditions and at any altitude and flight speed. The Air Defence missiles carrying air arm was highly mobile, being capable of swiftly concentrating its effort on the decisive sectors against the main groupings of enemy air attack means, while its greater range made it possible to combat these means as far as their launching sites. . . . The task of discovering and warning of enemy attack in good time was tackled by the **Air Defence Radar Troops**,

which possessed a wider range of electronic means, capable of detecting air and space attack systems, indentifying them, determining their precise co-ordinates and tracking them to guide anti-aircraft missiles and carrying aircraft to their targets. **Soviet ground forces**, the most numerous and for long the principal fighting services, also had air defence means equipped with surface-to-air guided missiles, anti-aircraft artillery and electronic facilities. They were capable, in close co-ordination with fighter aircraft, of reliably protecting troops concentrations and their logistical elements from enemy air attacks. Soviets had also recognised that in modern times, the role of **airborne troops** had grown considerably. They had therefore, been given the capability of swiftly consolidating the success gained as a result of nuclear strikes. Landing in the enemy rear, they had been given the task of capturing vital military objectives, administrative, political and economic areas and establishing airheads for receiving the main forces. They were also required to fight the enemy reserves, facilitate the advance of friendly troops across the major water barriers and disturb the enemy's system of command and the work of his logistical services. The introduction of new weapons systems necessitated further the mastering of new methods of combat and the improvement of the system of training and education. The personnel of the airborne troops were recruited from among the best Soviet youth, distinguished by lofty patriotism, high standards of training, discipline courage and valour. The possibilities of the **Soviet Air Force** as markedly expanded, it had changed radically, attaining a qualitatively new status. The Soviet Air Force had become super-sonic, missile carrying, all weather capable of carrying out combat assignment at all altitudes. Bombers were replaced by missile carrying aircraft capable of hitting any target, mobile or stationary on land or at sea, at great distances. Air-to-ground and air-to-air missiles had become the basic weapons of supersonic missile carrying planes, fighters and fighter-bombers. The speed and altitudes of flights had grown enormously. Many modern airplanes possessed computerised 'memory' which informed the pilot of deviations from the set route in flight. With the help of radar modern planes could see for hundreds of kilometer even through the clouds. The use of swing wings made it possible for airplanes to fly at low speed when necessary and thus save fuel; when the need arose the wings could be kept back and the planes could fly at velocities of two or three Mach or more. Sophisticated instruments and automatic equipment helped the pilots carry out the most difficult assignments.

PRESENT STRENGTH AND ORGANISATION:—As at present the Armed Forces of the Soviet Union are divided into: Ground Forces, Navy, Air Defence and Rocket Forces of Strategic Assignments. Two additional components under the Ministry of Defence are the Long range Aviation and the Airborne Forces. The land based missile deterrent is controlled by Strategic Rocket Forces. As at present the Soviet Air Force includes the following main categories: (1) **The Long Range Air Force (Long and medium range strategic bombers)** (2) **The Tactical (or frontline) Air Force which includes fighters and light bombers;** (3) **The Air Element of the Air Defence Command (fighter interceptors)** (4) **The Naval Air Force** and (5) **The Air Transport Force.**

As at present the Soviet Armed Forces have a total personnel strength of 3,357,000 men. The total personnel strength of Soviet Air Force is 550,000 men and 10,000 combat aircraft. **The long-range Air Force is grouped in three main areas, Western USSR, Central, Ukraine and the Far East.** In addition, it has staging dispersal points in the **Arctics.** The aircraft strength of this force

is 140..100 TU-20 Bears and 40 MYA-4 Bisons. Tankers, 50 Bisons, Medium bombers 700; .. 500 TU-16 Badgers and 200 TU-20 Binders. **Air Defence Command (PVO-Strany)** is a separate command of anti-aircraft artillery and surface-to-air missile unit, using an early warning system based on radar and fighter interceptor squadrons for identification and interception. Total aircraft strength of this command is about 3,200 interceptors, mostly MIG-19s, MIG-21s and SU-9s, with a few MIG-17 still in service. Newer aircraft include the YAK-28P and TU-28 and more recently SU-11 and MIG-23. Many of these aircraft carry air-to-air missiles (AAM), AEW aircraft some modified TU-114 with the designation Moss. **Tactical Air Force** has some 5,000 aircraft on strength. This grand total includes light bombers, fighters, helicopters, transport and reconnaissance aircraft. Some obsolescent MIG-17, MIG-19s and IL-28s are still in service. The most notable high performance aircraft are the MIG-21J and YAK-28 Firebar fighters. The ground attack SU-7 and supersonic light bombers YAK-28. Ground attack aircraft equipped are with a variety of air-to-ground rockets. The variable—geomatry Flogger may also have entered service. **The Air Transport Force** has some 1,700 aircraft. This total includes IL-14s a AN-24-s, some 800 AN-12s and IL-18 medium transports and 10 AN-22 heavy transports. There are in addition, civil aircrafts of **Aeroflot**, some of which can be adapted to military uses. These include about 275 long and medium range TU-104s, TU-114 TU-124s. About 800 helicopters in use with the ground forces include troop-carrying MI-6s and MI-8s and the heavy load carrier MI-10. The MI-12, a very heavy load carrier may also have entered service. The total helicopter inventory is around 1,750. (See also 'Post-War Navies and Push-Button War').

For Plastic Requirements

CONTACT

KAKUBHAI GOVINDJI

384K, KALBADEVI ROAD, BOMBAY-2.

Cable : 'PLEXI', BOMBAY

Phone : 312761-318223

MANUFACTURERS REPRESENTATIVES PRINCIPALS FOR

CELLULOIS & PLASTICS (ACRYLICS)

Bakelite Xylonite Ltd. (U.K.)

For C.N. SHEETS

Bexford Ltd. (U.K.)

For C.N. SHEETS

Kanase Button Manufacturing Co. Ltd. Japan

For A.P. SHEETS

The Colonel Sahib

At all times he prizes
prestige .. popularity ..
and personality.

Never can he forget he has
a "position" to maintain,

With him a smart "turnout" ..
"correct" clothes, distinguished
by superior-quality fabric
and flawless styling .. are
traditional - a 'fetish' - an
inviolable article of his creed.



Men who matter ...

Prefer **Castle Mills**



Woollen Fabrics

MILITARY GABARDINE • WHIPCORDER • & SERGES

FANCY HEAVY & LIGHT WEIGHT SUITINGS

THE WARSAW PACT

IN the post war years, the Soviet leaders clearly and categorically recognised that their armed forces would draw their real and ultimate strength from their comradeship with the armed forces of the socialist states based on the similarity of social and state systems, common political goals and the identical Marxist Leninist ideology of their people. Under the circumstances, therefore, the Communist Parties of all the 'fraternal' countries were directed to concentrate their efforts on the development and consolidation of the comradeship-in-arms existing between their armed forces.

The most important development in this respect was the conclusion of bilateral friendship, co-operation and mutual assistance treaties of defensive nature in 1945-48. In 1953-55, in view of the aggravation of the international situation, the 'socialist' states began to give even greater attention to the question of strengthening their defence capabilities. In November, 1954, the governments of the 'socialist' countries gathered for a conference in Moscow at which they discussed questions of the international situation and adopted a Declaration which stated that **'the peace loving states are compelled to take urgent measures to oppose aggressive forces, with the united might of the peace loving states in the interests of their security'**. In response to this, a new conference of the leaders of the 'socialist' states was held in Warsaw at which the **Warsaw Treaty of Friendship, Co-operation and Mutual Assistance** was concluded. It stated in part, **'In the event of an armed attack in Europe against one or several of the signatory states by any state or groups of states, each signatory state shall, in pursuance of its right to individual and collective self defence and in accordance with Article 51 of the United Nations Charter, give the state or states subjected to such attack immediate assistance individually and in agreement with the other signatory states with all means it may deem necessary, including the use of armed forces.** Since then the Warsaw Treaty has been the basis of the military co-operation and security of the socialist states.

WARSAW TREATY:—According to the signatories, the Warsaw Treaty is based on principles of equality, respect of national sovereignty and non-interference in the domestic affairs of other countries. Troops of the one state may be stationed in the territory of another only by mutual agreement. The Warsaw Treaty has served to seal and further develop fraternal ties between the Soviet Armed Forces and the armed forces of other socialist states. The comradeship between them has contributed to their fighting capacity and their cohesion in union of comrades-in-arms. The personnel of the Warsaw Treaty Armed Forces are educated in a spirit of internationalism. The comradeship and realisation of the unity and might of the armed forces of the Warsaw Treaty Countries has found the greatest expression at joint exercises and war games. The Warsaw Pact is a multilateral military alliance formed by a "Treaty of Friendship, Mutual Assistance, and Co-operation" signed in Warsaw by the governments of the Soviet Union, Albania, Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, and Romania (Albania denounced the Pact in September, 1968) According to East European documentary sources, the Pact is committed to the

defence of only the European territories of the member states. The Soviet Union is also linked by bilateral treaties of friendship and mutual assistance with Bulgaria, Czechoslovakia, East Germany, Hungary, Poland and Romania. All the present members of the Warsaw Pact also have similar bilateral treaties with each other. The Soviet Union concluded state-of-forces agreements with Poland, East Germany, Romania, and with Czechoslovakia in October, 1968; all these remain in effect except the one with Romania, which lapsed in June, 1958 when Soviet troops left Romania. The essence of East European defence arrangements is not, therefore, dependent on the Warsaw Treaty as such.

ORGANISATION:—The Organisation of the Warsaw Pact has two main bodies. The first, the **Political Consultative Committee**, which, in full session, consists of the First Secretaries of the Communist Party, heads of the governments and the Foreign and Defence Ministers of the member countries. It has met twice in the year up to July, 1971, at which point there had been seventeen meetings in all. (Some of these meetings have been entitled Meetings of Ministers). The Committee has a **Joint Secretariat**, headed by a Soviet officer, consisting of a specially appointed official from each country, and a **Permanent Commission**, whose task is to make recommendations on general questions of foreign policy of pact members. Both these bodies are located in Moscow. The second body, **The Joint High Command**, is directed, according to the Treaty, "to strengthen the defensive capability of the Warsaw Pact, to prepare military plans in case of war, and to decide on the development of troops". The Commission consists of a Commander in Chief (CinC), a Defence Committee, made up of the six Defence Ministers of the pact, which acts as an advisory body, and a Military Council. This body, which is modelled on a similar organisation in the Soviet Armed Forces, meets under the chairmanship of the CinC and includes the Chief of Staff (CS) and permanent military representatives from each of the allied armed forces. (It seems to be the main channel through which the Pact's orders are transmitted to its forces in peacetime, and through which the East European forces are able to put their point of view to the CinC. The pact also has a Military Staff, which has been enlarged by additional non-Soviet senior officers. The posts of CinC and CS of the Joint High Command have, however, always been held by Soviet officers, and most of the key positions are still in Soviet hands. In the event of war, the forces of other Pact members are operationally subordinate to the Soviet High Commands. The Command of the air defence system covering the whole Warsaw Pact area is centralised in Moscow and directed by the CinC of the Soviet Air Defence Forces. The Soviet forces in the Warsaw Pact area are organised as the **Northern Group of Forces, with headquarters at Legnica in Poland; the Southern Group of Forces, with headquarters at Budapest, the Group of Soviet Forces in Germany, with headquarters at Zossen-Wunsdorf, near Berlin; and the Central Group of Forces, consisting of five divisions in Czechoslovakia, with headquarters at Milovice, north of Prague.** Soviet tactical air forces are stationed in Poland, East Germany, Hungary, and Czechoslovakia. The Soviet Union has deployed tactical nuclear missiles in Eastern Europe. Most East European countries have displayed short-range SSM launchers, but there is no evidence that nuclear warheads for these missiles have been supplied to these countries. Soviet MRBMs (and other strategic weapons) are based in the Soviet Union and remain under Soviet control.

THE WARSAW PACT COUNTRIES

BULGARIA

THE Bulgarian Army Aviation Corps first came into existence during the Balkan War of 1912-13 and operated briefly as a somewhat irregular force against the Turks. In 1915, Bulgaria joined the Central Powers and the Army Aviation Corps were reformed with German assistance. In 1918, under the Treaty of Neuilly, it was disbanded formally and ceased to exist until 1937, when a small Air Force was formed. Bulgaria signed a treaty with Soviet Union in 1947. The latest known strength of Bulgarian Air Force is 22,000 personnel with 252 combat aircraft organised into **6 fighter-bomber squadrons** with MiG-17, **4 interceptor squadrons** with MiG-21, **3 interceptor squadrons** with MiG-19, **5 interceptor squadrons** with MiG-17, **1 reconnaissance squadron** with IL-28s (12 aircraft in a combat squadron), **2 reconnaissance squadrons** with MiG-17C, 4 Li-2, 6 AM-2 and 10 IL-14 transports. About 40 Mi-4 helicopters, 1 parachute regiment.

CZECHOSLOVAKIA

CZECHOSLOVAKIA became an independent Republic in October, 1918, with the federation of territories of Bohemia, Moravia, parts of Silesia and Slovakia, together with Ruthenia. After military liberation by Russian and US Forces, between October 1944 and May, 1945, Czechoslovak sovereignty was restored with the exception of Ruthenia, which was transferred to the Soviet Union. After the Communist take-over in 1948, the Army Air Force was purged. Those personnel who had served with and had been influenced by the Royal Air Force were removed. The service was reorganised on Soviet lines and Russian Aircraft were supplied. The Czechs also built them under licence. The latest known strength of the Czech Air Force is 40,000 personnel with 504 combat aircraft organised into **12 ground-support squadrons** with IL-28, Su-7, MiG-15 and MiG-17, **18 interceptor squadrons** with MiG-17, MiG-19 and MiG-21, **6 reconnaissance squadrons** with MiG-15 and L-29. There are 14 aircraft in a combat squadrons. About 50 Li-2, IL-14, IL-18 transport, about 90 Mi-1, Mi-4 and Mi-8 helicopters.

EAST GERMANY

SCOON after the creation of the German Federal Republic in September 1949, German Democratic Republic came into existence. The Republic became a signatory of the Warsaw Pact in 1955. The **Luft Streikkrafte** was established in 1955 and was organised on tactical lines for army support. The air section of the **National Volksarmee** (NV/LSK ULV) in fact began in 1950 as a branch of **Volkspolizei**. As at present, the overall command of the Air Force is vested in the **Ministerium fur Nationale Verteidigung** (MFNY-Ministry of National Defence). The latest known strength of GDR is 20,000 personnel with 290 combat

aircraft formed into, **2 interceptor squadrons** with MiG-17, **16 interceptor squadrons** with MiG-21 (16 aircraft in a combat squadron), 30 transports, including AN-2, IL-14 and Li-2, 20 Mi-1, Mi-4 and Mi-8 helicopters. There is also an anti-aircraft division of 9,000 formed into 5 regiments equipped with about 120 57 mm and 100 mm AA guns and with SA-2 SAM.

HUNGARY

HUNGARY was occupied by Russian forces in 1945. The HAF was reorganised on Soviet lines with Russian equipment replacing obsolete German arms, Hungary became a Communist country following the elections in 1949. Hungary later became a member of the Warsaw Pact, which she joined in 1955. The latest known strength is 12,500 personnel with 130 combat aircraft organised into **1 fighter-bomber/recce squadron** with MiG-17, **10 interceptor squadrons** with MiG-19 and MiG-21 (There are 12 aircraft in a combat squadron), About 25 AN-2, IL-14 and Li-2 transport aircraft, about 6 Mi-1 and Mi-4 helicopters.

POLAND

AS at present, Polish Air Force is a tactical force equipped with fighters, fighter bombers and light bombers of Russian design. All officers of the fighter bombers and light bombers of Russian design. All officers of the Polish Armed Forces are required to learn Russian. Arms equipment training, tactics and military doctrine have been brought into line with those of the USSR to meet primary commitment of defence and tactical support within the Warsaw Pact, which Poland signed in May, 1955. Most of Russian personnel have since been withdrawn, but licenced manufacture of Soviet types continues as the main source of procurement. The latest known strength of the Polish Air Force is 55,000 personnel with 730 combat aircraft organised into **6 bomber/recce squadrons** with IL-28, **12 fighter-bomber squadrons** with MiG-17 and Su-7, **40 interceptor squadrons** with MiG-17 and MiG-19 and MiG-21, **3 reconnaissance squadrons** with MiG-15 and MiG-17 (12 aircraft in a combat squadrons). About 45 AN-2, AN-12, IL-12, IL-14, IL-18 and Li-2 transports, 40 helicopters including Mi-1 and Mi-4.

RUMANIA

AS a Soviet satellite Air Force, the Rumanian Air Force comes under the Unified Military Command in Moscow, in accordance with the Warsaw Pact. Its main role is the defence of Rumanian oil fields, and the fighter elements are integrated with Balkan based Soviet units plus those of Bulgaria and Hungary. A small proportion of the RUAF comprise light jet bombers for the support of the national army. The latest known air power of the Rumanian Air Force is 21,000 personnel with 230 combat forming **18 interceptor squadrons** with MiG-17, MiG-19 and MiG-21, **1 reconnaissance squadron** with IL-28 (12 aircraft in a combat squadron), **1 transport squadron** with IL-14 and Li-2, 10 Mi-4 helicopters.

OTHER EUROPEAN COUNTRIES

Albania:—Total strength: 4,000 with 72 combat aircraft forming 3 fighter squadrons with MiG-17, 2 fighter squadrons with MiG-15, interceptor squadrons with MiG-19 (A combat squadron has 12 aircraft), 1 transport squadron with AN-2 and IL-14. About 8 Mi-1 and Mi-4 helicopters. **Austria.** The latest known strength of the Austrian Air Force is 4,350 personnel with 23 combat aircraft forming into 17 Saab 105 fighter-bombers, 6 J-29F Tunnan fighter-bombers, 35 Magister, Vampire and Safir trainers, 19 Cessna L-19 light reconnaissance aircraft, 1 transport squadron with 3 Beavers and 2 Skyvan, 22 AB-204, 23 Alouette and 12 AB-206 helicopters. **Finland:**—Total strength is 3,000 personnel with 48 combat aircraft organised into 3 fighter squadrons with MiG-21F and Gnat Mark 1, 12 Magister armed trainers. About 100 other trainers including 70 Magister, 30 Safir, and a few MiG-15/MiG-21 UT-1. About 10 C-47 and Beaver transport: Hound, Alouette 11, and 4 AB-204B helicopters. **Spain:**—The latest strength of the Spanish Air Force is 33,500 personnel with 221 combat aircraft forming 12 Mirage-IIIIE fighter-bombers, 50 F-5 fighter bombers, 55 HA-200 fighter-bombers, (36 F-4C fighter-bombers were under delivery), 21 F-104G interceptors, 48 F-86F interceptors, 25 T-6 armed trainers, 1 ASW squadron with 11 Hu-16B. About 150 transport aircraft and helicopters, including C-47, C-54, 12 Caribour and 20 Azors. **Sweden** Total strength: 5,800 regulars; 6,400 conscripts with 650 combat aircraft forming 10 attack squadrons with A-32A Lansens (with RB-04 ASM) replacement by the Aj-37 Viggen was due to start in 1971), 13 AWX squadrons with J-35 Draken, 8 AWX squadrons with J-35 Draken A/D, 2 reconnaissance fighter squadrons with S-32C, 3 reconnaissance day fighter squadrons with S-C-130E and 7 C-47, 1 heavy helicopters squadron with 10 Vertol-107, 6 SAM squadrons with Bloodhound IIs. There is a fully computerized fully automatic control and air surveillance system, Stril 60, co-ordinating all air defence components. **Switzerland:**—Total strength: 3,000 regulars; 7,000 conscripts, 40,000 reservists (maintained by civilians) and 315 combat aircraft organised into 13 ground support squadrons with Venom FB-50, 2 interceptor squadrons with Mirage-IIIS, 5 interceptor squadrons with Hunter F-58 (with sidewinder AAM), 1 reconnaissance squadron with Mirage-IIIR (A combat squadron has 15 aircraft), 20 transport including 3 JU-52/3 and 6 Do-27, 80 helicopters including 60 Alouette II/III, 40 AA batteries with Oerlikon twin 35 mm cannon, 2 SAM battalions with Bloodhound II. **Yugoslavia:**—Total strength is 20,000 personnel with 330 combat aircraft forming into 10 GA squadrons with F-84, Kraguj and Jastreb, 10 fighter/interceptor squadrons with F-86D/E and MiG-21F/PF, 2 reconnaissance squadrons with RT-33, (A combat squadron has 15 aircraft), 60 Galeb trainers, 25 Li-2, Beaver, C-47 and IL-14 transports, 50 Whirlwind and Mi-4, and some Alouette III helicopters, 8 SAM batteries with SA-2.

● **WE CONGRATULATE**

OUR DEFENCE FORCES ON
THEIR MAGNIFICENT VICTORY
OVER OUR ENEMY

● **WE PAY OUR HOMAGE**

TO THOSE WHO LAID THEIR
LIVES FOR DEFENDING THE
FREEDOM OF OUR COUNTRY

● **WE CONTRIBUTE**

OUR HUMBLE SHARE IN THE
NATION'S STRIVINGS TOWARDS
SELF-RELIANCE IN INDUSTRIAL
RUBBER GOODS

● **WE MANUFACTURE**

- CHAKRA MAJOR CYCLE TYRES & TUBES
- SUPER - DE LUXE - RICKSHAW 4 PLY
TYRES - HOSES - SHEETINGS - TUBINGS
CAMEL BACK MATTRESSES & PILLOWS -
CYCLE RIMS & KERALA CYCLES

JAI JAWAN - JAI HIND

TRIVANDRUM RUBBER WORKS LTD.

(A KERALA GOVERNMENT UNDERTAKING)

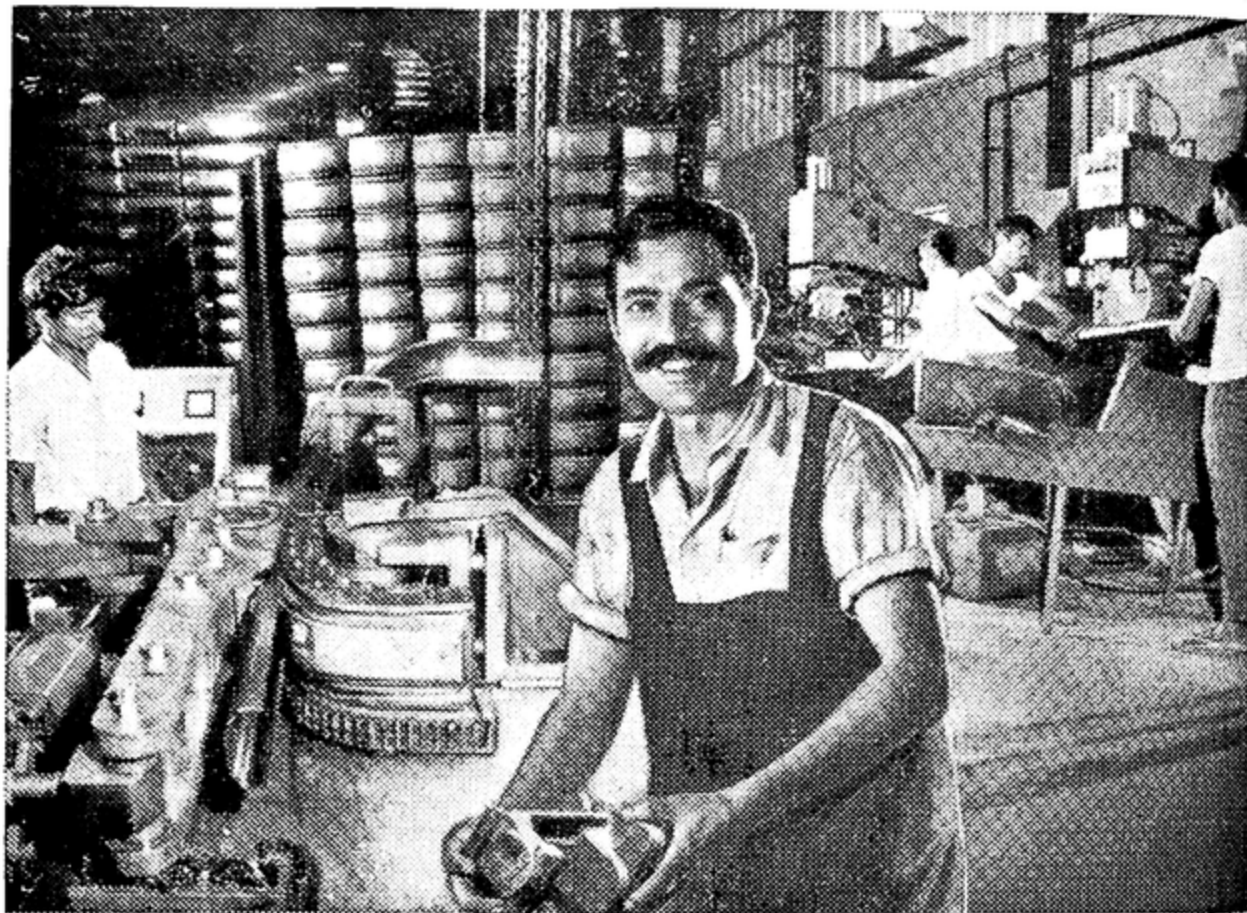
TRIVANDRUM-7 — KERALA

CHAPTER IX

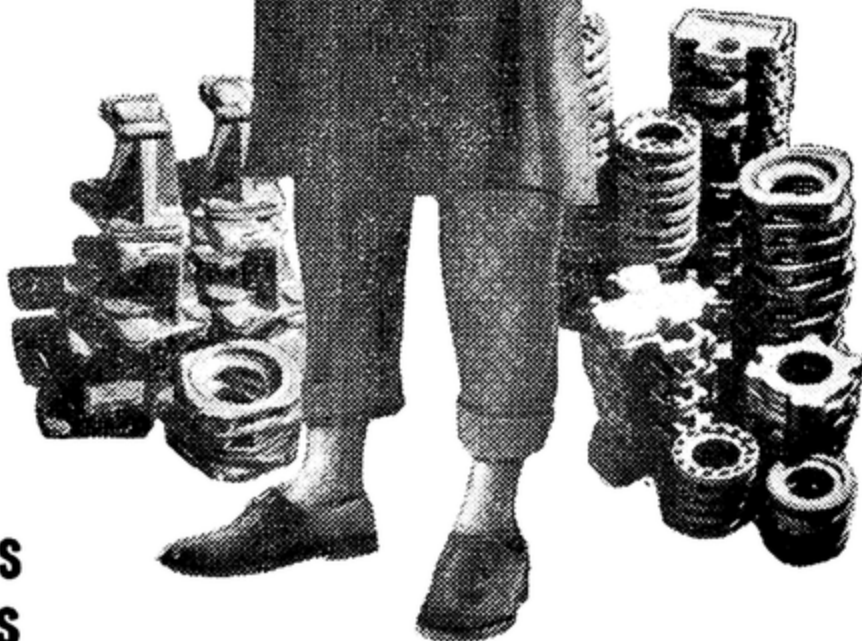
SEA POWER

. . . . MEANING AND PURPOSE

IT is entirely possible that men in remote antiquity knew that seven-tenth of the globe was covered by sea. It is also entirely possible that they knew that across these mighty oceans, there were people living in different countries and under their own national labels. However, since they had no means of surface mobility, they were living in their own splendid isolation. Their wars during this period, whatever the extent and intensity, according to their thinking and planning, were mere localised conflicts of land force using overland routes only. However, sea power was born when a hollowed-out trunk gave to man the first 'extremely rudimentary' means of surface mobility. Sea power registered its first further advance when this hollowed-out trunk enabled the sea faring people to transport themselves and supplies to the next nearest shore. Sea power became an instrument of war when these hollowed-out trunks, further developed, enabled them to carry their armed men and military hardware for wars and conquests abroad. When more and more countries began to possess their 'sea arms', and began to use them for offensive and defensive warfare, the sea itself became theatre of military operations. Immediately, safety and security of sea lanes became subject matter of vital national importance. Because sea warfare began to occupy a place of greater and greater importance in the war plans of what later came to be known as "the maritime powers," there emerged new concepts of strategy and tactics 'the strategy and tactics of blue waters'. Advances in science and technology brought into existence a bewildering variety of men-of-arms and the weapons systems. These vessels and weapons systems ultimately, not only enabled the maritime powers to wage their wars on the surface of the seas but also deep beneath the surface of the seas. Centuries have passed. Science and technology has not only carried the war into the skies but deep into the space and even beyond it. However, sea power has not lost its original importance. Actually, as a means of extension of national power seaward and from the high seas beneath the surface of high seas and into the space and beyond, it has increased its importance many times over.



**From HARI
and hundreds
like him
TELCO buys
over 50 crores
worth of parts**



The indigenous content of Telco products is well over 98%. And for their materials and parts Telco depends upon hundreds of small workshops and ancillary industries all over the country. In the early years there were few ancillaries but with Telco's assistance and know-how and in some cases even financial help, a very large number of units of varying sizes, both big and small, scattered throughout the country, are now producing high quality materials for Telco.

Telco products are being exported in ever increasing numbers and this has also paved the way for the export of indigenous ancillary products made by people like Hari.

The more vehicles Telco produces the more orders there will be for Hari and more opportunities for ancillary industries. And so the cycle goes on bringing wealth and prosperity to people throughout the country.



TATA ENGINEERING AND LOCOMOTIVE COMPANY LIMITED

THE MEANING :—Sea power even during period gone by did not mean mere 'men of war'. On the contrary, it always meant the sum total of all those weapons, installations and geographical circumstances which enabled a nation to control transportation over the high seas during war and deny these very advantages to the enemy. In this context, it always meant combat ships of all types, arms and equipment that enabled them to fight effectively, auxiliaries, merchant marine, factories, bases, building yards and resources to construct and maintain the ships and trained men to operate them whenever and wherever required. In the military sense, sea power always comprised all those elements that enabled a nation to project its military strength seawards and beyond the seas. However, whatever the growth and development of the sea power during the period, and whatever its combat employment, sea power still lacked a precise and exact definition. It was left to **Admiral T. A. Mahan of the US Navy** to provide this definition. According to him; "Sea power in its broadest sense, included, not only the military strength afloat that ruled the sea or any part of it by force of arms, but also the peaceful commerce and shipping, from which alone a military fleet naturally and healthfully sprang and on which it securely rested". The definition has since been brought further up-to-date by **Paul Ignatious**, a former Secretary to the US Navy. According to him; "To many sea power defines the act of controlling the world sea lanes through the employment of combatant ships. In reality, sea power has a broader definition. It encompasses the Merchant Marine, Oceanography, Ocean Engineering, Maritime Research and Technology, as well as Naval Power".

FUNDAMENTALS OF SEA POWER :—It was also left to Admiral Mahan to enumerate clearly and categorically the set of fundamentals and immutable principles, similar to the contribution made by Jomini to land warfare. These fundamentals have since remained unaltered. In Mahan's judgement, naval power, naval strategy and sea power were conditioned by certain fundamental natural phenomena. From the basic hypothesis that sea power was vital to national growth, prosperity and security, Mahan proceeded to an examination of the fundamentals which, according to him were: (a) **Geographical position**, (b) **Physical configuration**, (c) **Extent of territory**, (d) **Population, numbers, nature and character**, (e) **National character**, and (f) **Government institutions and policies**. According to Mahan, national character, and aptitude were essential factors in the success of sea faring people. The desire to trade and the ability to produce the commodities which entered into the trade, together constituted the national characteristics, most important to the development of sea power. Granting it, and a good sea board, no dangers of sea or any aversion to it, could deter a

WITH OUR WARMEST GREETINGS TO
ALL OFFICERS AND MEN OF THE ARMED FORCES

●
ROCKHARD FIRE ENGINEERS

25, BANK STREET, BOMBAY-1.

Phone : 254292

MANUFACTURERS OF

* "PROTOFIRE" EXTINGUISHERS * "COMMANDER" DRY
CHEMICAL FIRE EXTINGUISHERS AND A-Z FIRE PROTECTION
REQUISITES

BRANCH : OFF RAMSON BUILDING, 83-84, S. J. PARK ROAD, BANGALORE-2.

people from seeking wealth by the paths of ocean commerce. However, Mahan laid the greatest emphasis on Governmental institutions and policies. In his opinion efficiency, intelligence and determination of a government were the decisive factors, in the development of all forms of power, including sea power. In his opinion, Government alone could be responsible for the size of Navy, the quality of naval establishments, the capacity of the naval organisation to expand quickly in time of war, and the spirit of its men and its effectiveness in combat.

ELEMENTS OF SEA POWER :—Once the fundamentals of a sea power were clear, Mahan and other thinkers on 'Sea Power' then proceeded to define and enumerate the **Elements of Naval Power**. The final enumeration that emerged included the following essential elements, each of which had to be present in an adequate form. (1) **The Strength Elements**—Which meant the possessions of the instruments of maritime power and the bases from which these instruments could operate with maximum ease and efficiency, and with decisive and overwhelming advantages to the national objectives in war. (2) **The Security Element :—**Which meant the safety and security of bases from which all the instruments of maritime power worked. If these bases were lacking or were inadequately defended, the ships, and aircraft could not successfully function and therefore, could not achieve the desired objectives. (3) **The Transport Element :—**Which meant instruments of sea power, strong enough to feed the home population, bring raw materials needed by the industry, carry export overseas, transport armies and their multifarious supplies to the theatres where they were required to fight. Despite all other innovations and inventions, seaborne transport of bulk raw materials, manufactured products and mass movements of armies and necessary supplies could not be replaced by airlifts or nuclear propelled rockets. (4) **Manning and Maintenance Element :—**Which meant trained crew and adequate ship building and ship repair industry, in order that number of ships in service were always adequate and damages and losses suffered in action could be repaired and replaced rapidly. In the ultimate analysis, apart and aside of the men-of-war, naval bases and facilities ashore, as diverse in their functions and purposes as the weapons system they served, were integral part of maritime power. The patrol planes that flew from them, the minecraft and auxiliaries that sortied out from them to the combat ships and the men of Navy, selected and trained at technical schools, etc. constituted the true elements of naval power. Shore establishments that created, built, supplied, supported, harboured, maintained, trained and provided the necessary command and control were key parts of sea power.

CURRENT DEVELOPMENTS :—Sea power, born at the hands of the authors and architects of the first hallowed out trunk, has since passed through various stages and phases of development, each more revolutionary than the earlier one. It has also since seen combat employment in numerous wars and has been the cause of rise and fall of several empires. However, according to the military commentators of our day, the most revolutionary advances in sea power, have been registered only during the period beginning with first World War, when the war machines on the high seas acquired their three dimensional nature and character. Still more revolutionary, 'the very ultimate in the opinion of some' have been registered after the close of World War II. Writing on the nature and character of 'Sea Power in the Seventies', Captain W. J. Ruhe of US Navy, has observed: "Sea power once involved, fundamentally, only the surface of the seas. In the past few decades, however, aircraft operating over the seas and submarines operating below the surface had increased the dimensions for

the application of sea power. Today, not only are we experiencing the revolutionary effects of radical changes in the sea transportation industry, we are apparently also on the threshold of an even more profound changes in the nature of sea power....Ahead of us lies a decade of developments of undersea power.... a breaching of a new frontier of the earth. The movements into the depths of the oceans to exploit the wealth of the deep sea bed resources and use the potentials of the vast bodies of water covering the earth is accelerating. The years ahead should demonstrate clearly the value of sea power in the traditional sense. However, in the immediate future, we should see also the creation of a new and additional extension of sea power....undersea power". Commenting on the Changing nature and character of Sea power Admiral John Mc Cain, of the US Navy, has said, "Freedom of the seas (even for electronic intelligence ships or nuclear ballistic missiles submarines) has created a somewhat different ocean environments than that which Mahan observed, one where merchant marine power was vastly different from naval power and could not be exercised in the same way."

However, a number of developments have taken place after the close of World War II and these developments have necessitated a revolution of the scope and importance of sea power. These developments are: (a) **Political:** — This is the first major development. Before the outbreak of World War II, about nine nations constituted the world sea power. After the War almost all countries, formerly under the imperialist heels, have emerged free and have come to possess their own sea arms. However, for the most part, these new nations are under developed economically, socially, and politically and are good targets for aggressive nations....either through subversion or by direct intervention. Seas are the main avenues of approach to these countries. (b) **Technological:**— This is the second major development and represents one of the most profound changes in military strategy in the history of warfare. In consequence to these technological developments, sea power is no longer confined to the vast trackless wastes of the oceans. It now represents an additional element of military power, which can strike inland at land targets anywhere on the earth's surface. This fact has meant that all previous strategies dealing with sea power have to be revised drastically to include this inland reach of naval striking power. The new naval strike power has become threefold in nature....**the long ballistic missiles, jet powered aircraft and helio-lifted marine forces.** (c) **The nuclear power:**—This is the third major development. The unlimited destructive power of nuclear warheads has added new dimensions to the power which can be exerted at and from the area of the sea. And with its added destructive power from sea based naval units, the big wars are increasingly deterred by sea power. On the positive side, nuclear power has changed the need for well spaced refueling world wide, giving sea power total ocean wide effectiveness. Additionally, the nuclear powered submarine has demonstrated that strategies of naval warfare must now add the Arctic to their thinking and planning. (d) **Illusions of Distance:**—Hitherto, long distance could be sufficient security against external attacks. This has ceased to be so. The satellites used for long-range communications, the large and fast aircraft for larger and infinitely faster movement of people and supplies and the use of increasingly large ships for the transportation of liquids and bulk material have cut down fantastically the cost of communication and transport. The development of massive bulk carrying ships alone has had profound effect on the nature of sea power. Sea trade has become more world-wide, business has become increasingly international in scope. At the same

time sea trade has become more vulnerable to interdiction in time of war and geographical bottlenecks in sea trade have decreased in importance. With the use of satellites, distance has become almost of no importance in sending messages to far off and isolated locations. Jet aircraft can now move people across the oceans in a matter of hours. And the introduction of tremendous ships... as much as 5,00,000 tons... to ocean trade has provided such a drastic reduction in the long haul of bulky primary commodities as to cause new grouping of countries. **On all accounts, sea power has emerged as the dominating factor in creating new "presences", in new regionalisms and in the new shape and form that the war might take. Never before alliances have had greater meaning and purposes in the context of war than today.**

UNDERSEAS CAPABILITY:—The most revolutionary advance in sea power has been the projection of man's capability to work as a free swimmer, down to the depths of 1,500 to 2,000 feet or even more. This has already opened up industries aimed at exploiting the sea-bed to at least these depths. With the technological developments which have been sparked by the promise of profitable industrial operations at such depths, have come a host of capabilities for utilizing the sea bed and water column to this limit. **Dr. William A. Nierceberg of Scripps Institution of Oceanography (US) has noted that, "With the proliferation of underseas installations, military posts on sea bottoms will follow. They will be used as a source for intelligence on the movement on seas of hostile submarines. Control of the depths of the oceans, a three dimensional form of control, will have to be seriously considered as an extension of the limited aspects of control of the surface of the seas, as in the past. The possibility of exploiting the oceans basins for material purposes have added the possession of the oceans as an objective even if in a limited sense of the word. The drive toward possession and its accompanying technology will return naval warfare to its earliest origin, which was that of economic domination by the country that had most succeeded.**

Man's increasing capability to move about freely under water has created a great impact on **amphibious operations** as an important extension on of naval power. **A lock-out technology** from submerged vehicles has began to be translated into an extensive capability for launching large number of assault troops from bottomed submarines. A fairly modern conventional submarine, like the **"Graypack"** still retaining the two bow tanks, which housed Regulus missiles, can lock-out simultaneously several dozen troops mounted on underwater sleds and equipped with infantry weapons. This has been only the start of a new concept for powerful attack forces launched from underseas against defending forces in virtually any coastal area. The movement of vehicles close to the bottom or on the bottom itself, have been translating into a capability for military vehicles to operate close to the bottom and thus enhance their security by minimising the dangers of detection and destruction. What this new capability to hug the bottom might mean, in view of the trend towards the use of new hull materials, such as glass or ceramics, and the consequent rapid extension of submerged operations of vehicle to about 20,000 foot depths, is difficult to predict. And the new types of anti-submarine vehicles which must necessarily be developed would be even more difficult to visualise. But the chief trend in military submarine technology has been and would be towards operation at very great depths, and the hunter-killer submarine may have to be prepared to go to any depths to meet her objectives.

Floating platforms, which can provide off shore ports as well as airfields outside the territorial waters, have been becoming increasingly operational. With their appearance in a world of political environment which has continued to recognize the freedom of the high seas, the nature of sea power has become more autonomous and less dependent upon a world-wide network of land bases. The political influence of sea power has thereby been strengthened and the flexibility in the use of sea power has heightened. This development alone has provided the most significant increase in the influence of sea power to be seen in the 1970s. New types of sea based nuclear deterrent systems have emerged as the requirements for security, second-strike capability, assured destruction of enemy targets and survivability of such systems has been increasingly hazarded by technological developments. In fact, what is most easily predictable is that a whole new family of military weapon systems will grow out of man's mastery of the deep oceans, and their natures are extremely difficult to even guess. Just as sea trade on the surface of the oceans has for the past thousands of years been a prime factor in a nation's peace-time and war-time viability, the next decade should begin to demonstrate the importance according to the exploitation of the underseas and sea bottoms. The vehicles and industries developed, and the skills acquired in the process will create a new dimension of sea power in Mahan sense.

TASK OF SEA POWER :—The supreme task of maritime forces at war, is to so control the sea communications, both surface and underseas, as to

THE EASTERN BUNKERERS LIMITED

Scindia House,
Narottam Morarjee Marg,
Ballard Estate,
Bombay-1.
Telephone : 262461
Telegram : VAVTO

: CALCUTTA OFFICE :

: 20, Netaji Subhas Road,
: Calcutta-1.
: Telephone : 223156
: Telegram : VAVTO

BUSINESS ACTIVITIES

Stevedores, Shipping Agents, Bunkerers, Coal and Coke Suppliers, Dubashes, Victualling Contractors, Clearing and Forwarding Agents, Insurance Agents, Chipping and Painting Contractors.

Shipping Agents :

M/s. Czechoslovakia Ocean Shipping and International Joint Stock Company, Praha.

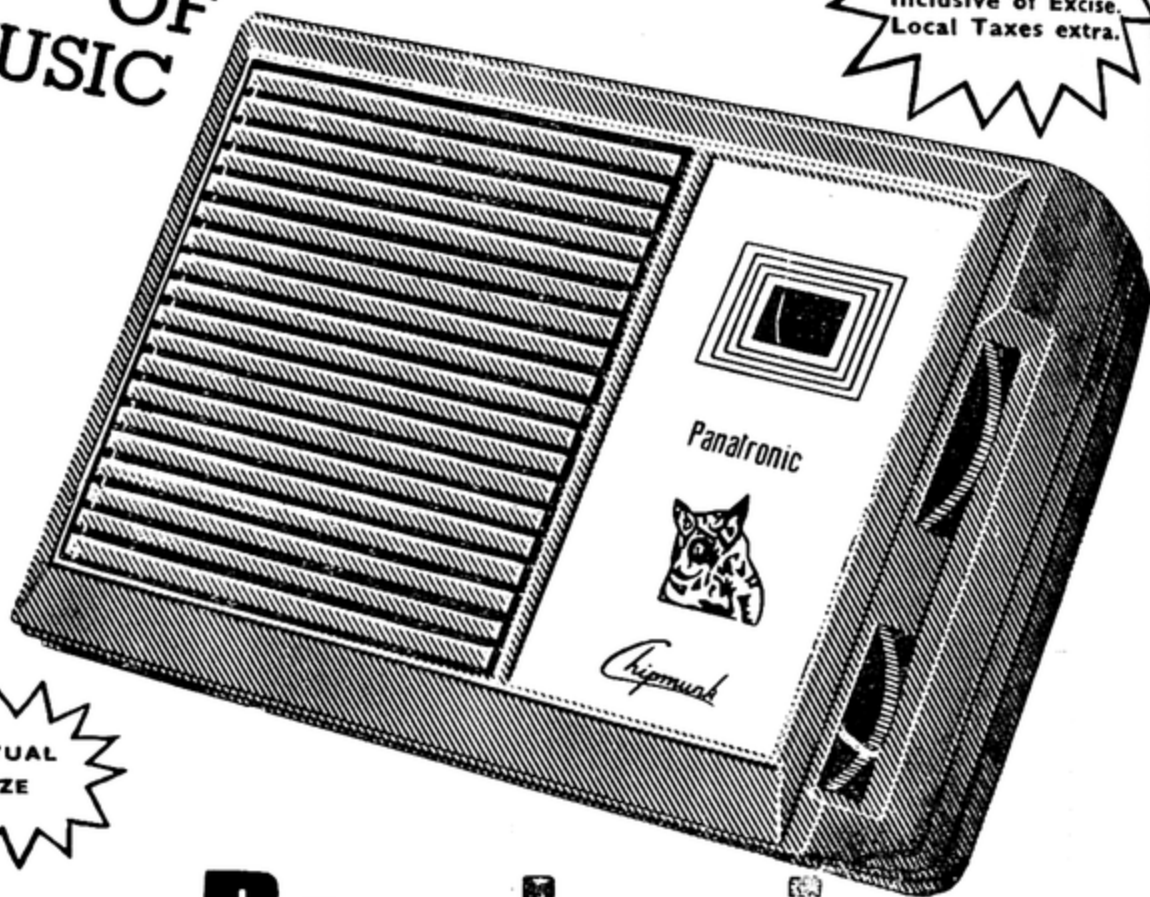
M/s. Cechofracht, Praha.

Forwarding Agents for India and Ceylon.

M/s. The United Arab Company for Maritime Transport, Cairo.

A
POCKETFUL
OF
MUSIC

Price
Rs. 80
Inclusive of Excise.
Local Taxes extra.



ACTUAL
SIZE

Panatronic

Chipmunk Transistor Radio

Brings you music on the move. Keeps you up to date on the latest sports commentaries and news bulletins. Live on the Chipmunk wavelength. Live in a world of sound.

From SEMICONDUCTORS LIMITED—a tradition of perfection.

SEMICONDUCTORS LIMITED

NAGAR ROAD, POONA-14



sc/3

ensure the passage of their country's ships carrying men and material from the points available to the points actually needed, unhindered by enemy actions, and at the same time deny the sea communications for similar use by the enemy. In saying, that sea power is intended to control transportation or communications, as military men prefer to call it, over the seas during war-time, the task of sea power hitherto was said to be the fulfilment of the following functions; (1) Transfer over water of land and air forced and military hardware for their use. (2) Transfer of commodities of ordinary sea-borne trade, including industrial goods and what are generally termed strategic raw materials. (3) Prevent the enemy from using the sea to transport his own armies, air force, military hardware and strategic raw materials. (4) Exert military, economic pressure on the enemy by preventing him from importing overseas commodities which are scarce or are lacking in the region under his control. (5) To act as a mobile artillery, and in the present context as an aircraft-missile base, in the direct assault against land objectives, either in covering a landing or in co-operation with armies already ashore, by operating near the coast or merely in the independent bombardment of the enemy coastal installations. (6) The function of maritime forces in amphibious expeditions, which have increased many times over in the recent years differ considerably from those of the forces employed on mercantile convoy work. In the latter case, their duties, end with the safe arrival of convoys in port. However, in the former case, they continue to support and assist the army even after it has landed, and continue to maintain the maritime control on which success on land hinges. Their functions at this stage in fact, cease to be purely maritime. They become part of one vast and integrated organisation comprising all arms of services and all working towards the common end. . . .defeating the enemy forces, to this has now been added: (a) Provide a general reputation for power which would give a nation considerable leverage in international affairs, (b) Comprise extensive world-wide sea trade, of great importance to national economy, (c) Provide a continuing bond between maritime nations which would both ensure mutual protection of their sea trade and, through military alliance, guarantee a continuing free use of the oceans, (d) Guarantee adequate logistics in time of war for support of economy and military force, (e) Deter general war by assuring massive destruction from the oceans, (f) Provide a capability to muster sufficient sustained power in an area of the oceans remote from own land based air power to pose effective control of that area, (g) Represent technological leadership in the development of the potentials of the oceans, with its many benefits, commercially, politically, and militarily, (h) Comprise a technological base which would permit build-up and reinforcement of sea for political and economic and national interests. (The capability or credibility of political manoeuvring), (i) Create prestige in the international scientific community of being authoritative on ocean matters.

COMMAND OF SEA:—The performance in a war by maritime forces, which in the present day context, includes wide-ranging aircraft, operating from land as well as from the blue waters and the submarines which operate underseas, produces a result positive to their own country and negative to those of the enemy. In the successful conduct of war, the latter is as important as the former. The side which is able to gain positive advantages and deny the same to the enemy is said to be in command of the sea. By Command of the sea, has never been meant control which is either complete in degree or unbounded in maritime space. This is because the high seas cannot be conquered not they are susceptible to occupation and ownership. Since the primary function of the

sea is to provide easy means of communications, command of the sea has always meant, control of such maritime communications as are necessary for the successful conduct of war, an infinitely more important element in the definition of the command of sea, introduced by aircraft and submarine, as weapons of war, has been the air above the communications and the water beneath the hulls of the passing ships. If, either the command of the air above and the waters beneath the surface of the sea, is inadequate, the command of the sea communications is neither sufficient nor effective, and the maritime actions cannot produce the desired results. There is a fundamental and vital difference between acquiring the command of the seas and exercising the same in pursuit of war objectives. Maritime forces acquire the command of a given area by beating down the strongest forces that the enemy may place in that particular area. They exercise this command by using their fighting supremacy to keep their own shipping moving with utmost freedom, while stopping those of the enemy. Assertion of command of the sea, becomes a complex and a hazardous task, when the enemy is not disposed to challenge the opposing force and resorts to weakening the opposing force by means, other than direct battle. Constant vigilance and counter action under such circumstances necessarily means a greater margin of superiority to the enemy, particularly in specialised craft, than under ordinary circumstances.

MARITIME STRATEGY:—In the context of modern war, there is no such thing as exclusive maritime strategy. However, maritime strategy has been defined as the principles governing the conduct of war in which sea is the substantial factor. This being so, naval warfare differs radically from land warfare in the objectives aimed, the implements used and the characteristics of the domain on which they are used. Maritime strategy, therefore, differs significantly from the strategy of land warfare. The all dictating difference between the strategies of land warfare and naval warfare is that; **whereas the former is based on the superiority of forces, coupled with the power to concentrate them at selected points, the latter is founded on the possession and the security of the bases, coupled with the capacity to distribute forces with utmost freedom.** The rule, therefore, is that, unlike land power, the strength of sea power does not spring from man power but instead from strategical (geographical) position. The best strategy, therefore, has always been and continues to be, defensive-offensive in the sense that command of the sea, so held and asserted must always

With The Compliments Of :

Phones.

Office : 3 2 2 3 4 0

3 2 5 8 6 2

Res : 3 6 3 5 7 7

Grams : STEELOCEAN

DHIRAJ STEEL CO.

98, MOHAMEDALI ROAD,

BOMBAY-3 (BR).

guarantee the freedom of movement towards or against any maritime objective within the strategical field. Modern developments have already brought about fresh changes in these instruments of naval warfare, and the duties performed by each of them. However, established principles governing their use have not been and will not be modified.

PHASES OF MARITIME STRATEGY:—Like the strategy of any other form of warfare, the prosecution of maritime strategy generally passes through several phases. The main among them are; (1) **The Defensive Phase:**—During this phase maritime power is used to defend the country from invasion, to cut the enemy off from the rest of the world, to weaken his economy by enforcing blockade, to hold and reinforce certain key points and areas overseas and to bring to the country, the supplies essential for survival. Although, defensive is the first consideration during this phase, yet no opportunity is lost to assume tactical and local offensive against such enemy forces as may present themselves. If such opportunities are lost, the period of strategic defensive may bring about a decline of morale and the will to fight, resulting in defeat in the very initial phases of war. (2) **The Period of Balance:**—During this phase, the maritime forces continue to carry out the functions which occupy the whole capacity during the first. In addition, they concern themselves with the development of offensive power, build up of all arms and plans for offensive employment. This phase ends with major offensive operations. (3) **The Offensive Phase:**—In this, the third and the last phase, upon which is dependent the entire outcome of the war, full advantage of patient pursuit of maritime strategy is reaped and forces are deployed for the offensive and gaining of ultimate victory.

OBJECTIVES OF MARITIME STRATEGY:—Following have generally been cited as the objectives of maritime strategy: (1) **As a part of instrument of national (allied) policy**, it must co-ordinate the use of its special tools and methods with other forms of national (allied) power to promote the achievement which may well be crucial in relation to the actual power of the national (allied) on the sea. (2) **As a part of overall military strategy**, it must aim at an ultimate goal namely military victory, with its particular elements and with its own methods, through which it can best contribute to the success of grand strategy of national (allied) policy. (3) **As a part of sea power**, it must maintain and extend national (allied) control of sea lanes, while reducing that of the enemy. (4) **The ability to use sea lanes is postulated on a number of pre-requisites, usually called 'essential elements of sea power'**. As sea power cannot long survive weakening or destruction of any one of its basic components, the task of naval strategy, therefore, must resolve itself into the protection and reinforcement of such of those elements of one's own sea power and the attack on and elimination of those of the enemy. (5) **To perform this task**, it can employ a number of different methods, such as **battle (Guerre-de-Course) blockade . . . economic or military . . . coastal warfare, co-operation in combined operations in support of other national (allied) power, etc.** The possible method of warfare can be chosen single or in combination, simultaneously or successively, depending upon the circumstances, such as which of the elements of sea-power are most exposed and vulnerable, which suit the relative strength of the opponent, which fit in best with overall military or with national (allied) strategy, etc. In many cases, the dual purpose of strategy, offensive and defensive, can be achieved simultaneously by one of these actions. Thus, for instance, the defeat or elimination

of the enemy fleet will at once remove the threat to one's own sea lanes and expose those of the opponent. Only the most actively aggressive measures have such double effect. Purely protective ones may often be needed to hold the lanes, while other forms, of national (allied) power work towards victory. However, only a vigorous offensive can make significant positive contribution to victory.

MARITIME CONCENTRATION:—The first step in gaining the command of a given maritime area is to keep concentrated in that area. This means to keep available for quick concentration, a force capable of dealing with the greatest concentrated force which the enemy may bring to bear. This idea is sometimes spoken of as the '**principle of concentration**'. The force which is retained for this purpose is known as the **battle-fleet** (Task forces in the context of modern war). Concentration has been called the assembling of the utmost force at the right time and place. This, however, must not be taken to necessitate mere massing together of ships and aircraft. A true maritime concentration is a far more subtle conception. It is well expressed by Mahan's definition, '**Warships working in close co-ordination, not huddled together, but distributed with regard to a common purpose and linked together by the effectual energy of a single will**'. If aircraft be included with the ships, of which he was speaking, this would be true today as it was when written. A maritime concentration must, therefore, maintain its flexibility and cohesion while covering as wide an area as may be necessary. Strength by itself cannot ensure success. However, there are certain other aspects of maritime concentration which merit consideration. The most important, is that the acceptable degree of division of maritime forces must be directly related to the number of posts and length of the coastline. The diversion and distribution of forces must not leave any part of point unwatched.

OPERATIONAL READINESS:—Any Military Commander, faced with impending conflict, would wish that he has the preponderance of forces. He would also wish that, his forces are equipped with the best of weapons and that all the vagaries of war are resolved to his advantage. As in other Services, so also in Navy, the most direct method of measuring combat effectiveness of the instruments of war at sea, short of actual combat, is through the measurement of operational readiness by statistical methods. Operational readiness, reduced by a combat degradation factor, would equate to combat potential. A knowledge of one's own combat potential and that of the opposing forces, and of war game methodology, would enable one to determine the adequacy of forces, required to accomplish a given combat mission. Such procedures are of ever increasing importance in decision making in the Governments, particularly in the Departments of Defence. Navies are, therefore, required to orientate their thinking to such system of analysis. If the extreme is no longer shunned, and no longer sought, much is generally left to their judgement to determine the limits of effort. Audit can only be done by deduction according to the laws of probability and from the data supplied by the phenomena of the real world.

NAVAL COMMUNICATIONS:—Naval communications are the means for getting the word to and from the fleet... above, below or on the surface of the seas. They are vital to the successful prosecution of war. Whatever the degree of computerised sophistications given to a Commander's Operational Control, Command Co-ordinate naval operations depends directly upon his ability to communicate, and it is always the task of naval

communications to provide this capability. The voice of command in modern navies is carried over many paths from the originator to the final addressee. World-wide fleet operations require a world-wide communications network. The back-bone of this network consists of highly reliable shore stations, which serve the fleets as ship-to-shore links. All ships and commands at sea are tied down to this net work by the area broadcast network which transmit administrative and tactical information, and an area ship-to-shore network over which the fleet can communicate with other units and shore base commands. In addition to the world-wide network, ship-to-shore, shore-to-ship and ship-to-ship networks are also put in operation for selected units of the Fleets. Command and control programme in modern navies provide automated operational control centre installations. They are of three types, each capable of integrated, and co-ordinated operations in all modes of warfare. These installations are:

(1) Fleet Operational Control Centres:—Which are furnished by Navy supported Unified Commanders and Fleet Commanders as organisations with Headquarters ashore. These centres give commanders an organisation and physical facilities for controlling and co-ordinating surface, sub-surface, air and space operations...plus, when required, surveillance and control of merchant shipping and assistance in evaluating strategic and tactical intelligence. **(2) Transportable Operational Control Centres:**—These centres provide readily movable command facilities for barrier and subordinate area commanders and temporary command, facilities for contingency operation or limited war applications. These units are capable of either helicopter or truck lift. **(3) Mobile Centres:**—These are installed in Command Ships and Flagships for selected major Commanders. The mobile units have the greatest survival probability of any naval command and control system during a nuclear war. The communications requirements of any Task Force of a fleet are determined by its size, its missions and its composition. Generally they do not remain constant throughout all operations to complete a mission. However, Command and Control is continuous in the fleets under varied operational situations...from the close-in-information which is utilized during the sorties from a harbour, to a widespread anti-air warfare which may cover vast areas. Within the fleets, units are provided the capability of operating with a degree of concealment, so that movements are not detected by the enemy. The security of the classified information passed over these network is preserved without jeopardising speed of delivery. Methods of receiving and transmitting classified information without prior encryption and decryption...usually a time consuming process...are in use and they remain under constant improvements.

DEPLOYMENT:—The moment of the deployment of a battle fleet is that at which strategy becomes tactics. It is the most critical moment in the whole naval warfare. By a wrong deployment, the commander of a superior fleet may place himself in a position of tactical inferiority which may more than wipe out any advantages he may possess in the number of ships and arms. The method and direction of deployment of the fleet must ensure that, when the enemy is sighted and comes within gun (missile) range, every gun (missile) in the fleet bears upon his ships, and other centres of sea power, while only a small proportion of enemy gun (missile) power can be employed in the similar role. This condition is created if the fleet is deployed in such a way that, on meeting the enemy, it is crossing the **enemy's bow**. Only the forward guns (missiles) of the leading ships of the enemy can be subjected to the concentrated fire of every gun

(missile) in the fleet. This situation is known as **Crossing the 'T'**. Earlier, the range at which a fleet action could be fought depended upon visibility. In perfect visibility, the first ranging shots could be fired when the fleets were still out of effective gun range... the range at which a reasonable percentage of hits could be expected. The battle situation, however, changed most radically with the introduction of aircraft carriers which made sea battle "beyond visibility range" possible. Situation has changed further with the introduction of missiles which have rendered obsolete the traditional concept of 'visibility'. (See also 'Push Button War')

TACTICAL ADVANTAGES:—During a fleet action, the Commander who feels himself in possession of advantages, either tactical, material or moral, must strive to close the range in order to secure more hits and to make the fire of his ships more decisive. A naval battle is a battle of movements. When both commanders are seeking battle, each must watch for the slightest indication of the intention of the other and be prepared to counter it at a moment's notice, for a tactical advantage may be converted into a tactical disadvantage in a few minutes by an astute enemy. Equally, a tactical advantage must be fully exploited, without the waste of a minute to achieve full effect because a clever enemy may even then be able to extricate himself from a seemingly impossible action.

SEA BATTLE:—It has been a fundamental precept with maritime forces to seek decision with the enemy by battle at sea. This tradition is regarded as one of immense power and value and serving as a major intoxicant. Nevertheless, it is a precept which, if carried too far, generally leads to indecisive battle. In actual practice the decision to battle is generally tempered by judgement and experience of those responsible for the conduct of operations. It has generally been accepted that, if enthusiasm for battle. Outrains judgement, the below falls in the air. On the other hand, by waiting with forces correctly disposed, the enemy can ultimately be compelled to offer an opportunity for successful action. In most wars, it is generally the policy of all navies, particularly the weaker ones, to avoid decision by battle which might lead to their destruction. Instead, they embark upon a policy of gradually weakening the enemy till such time as nearest equality is reached and a final battle can be faced with forces most evenly matched. However, it is very rare that major naval actions occur with both fleets anxious to give battle. The great majority of battles have always resulted from action being imposed by an aggressive and powerful fleet on the weaker and the reluctant one, despite the latter's efforts to evade and avoid such actions.

BATTLE DEVELOPMENTS:—No naval actions with long range nuclear weapons (missiles etc.) have so far taken place. Under the circumstances, therefore, even the best of naval theoreticians are not clear and exact about the nuclear battle formation and development. However, a development of great importance in modern times has been of attrition that comprises small scale actions, the so-called **guerre de course or guerrilla war at sea** by submarines, surface raiders and planes against the enemy's sea borne supplies, against his commerce or his troops convoy. However, with the conventional weapons, as hitherto, the first to be established is the extended air reconnaissance. This is followed by the cruise which are generally positioned at visibility distance and within the easy reach of intership communications and visual signalling. Between the cruiser line and the battle-fleet are the linking ships. They are also

positioned at visibility distance and serve as instruments for passing visual signals up and down the chain of ships. In the vicinity are also positioned submarines ready to attack the enemy fleet during the stages of the approach and before the main action between the opposing battle-fleets is fully developed. In the vicinity are also the aircraft carriers to render such services as may be required under the peculiar battle conditions. The main fleets consisting of capital ships formed into divisions and with their leaders in the line abreast, approach each other as per the battle plan with two fleets approaching each other the final engagement, the **'first sighting'** is by the reconnaissance aircraft ahead of the cruiser line. Their sighting reports disclose the course, speed, strength and disposition of the enemy. The first to go into action are the aircraft carriers land based naval planes in the absence of the carriers in an effort to sink or cripple as many of the enemy ships as may be possible, before the main action is joined. The attack is generally by torpedo-carrying aircraft synchronised with high level bombing and dive bombing. This is followed by contact between the cruisers, which bunch together for mutual support and try to fight their way through to the enemy fleet. Their main object is sighting and reporting back the position, disposition and movements of the enemy. They do not engage the enemy fleet. However, they are provided with the capability delivering torpedo attacks, particularly when the air reconnaissance is not available or it is ineffective on account of bad weather or by the strength and efficiency of the enemy fighter cover. The climax of the battle is reached when the battle fleets actually clash (see also **'Defence of Shipping'**).

SPOTTING THE SHOTS:—No naval battle with nuclear weapons has so far taken place. It can only be a guess as to what would be the spotting hazards in such a battle. However, even, in a conventional battle, spotting the fall of shots at long ranges is extremely difficult. However, this is vital factor in the control of naval gunnery. It is only by spotting the fall of shots that errors in the estimation of the enemy course and speed can be detected and corrected and such alternations made to the setting of the gunsights as enable hits to be registered. Aircraft have produced a new and valuable aid to the spotting of the fall of shot. In theory, the fleets send aircraft over the enemy fleet in a naval battle to report by radio-telephone, or with other available means, the fall of each salvo and the correction which should be applied to the sights before the next rounds are fired. In practice, however, this is seldom likely to be achieved. The hostile fleet will invariably detail fighter aircraft specially for the duty of shooting down the enemy's spotting aircraft. It will also employ anti-aircraft guns to keep the spotting aircraft so high that errors in spotting the fall of shot must occur. Mistaken spotting of the fall of shot is worst than no spotting at all, for the application of a wrong correction which may not be detected for several minutes. The difficulties confronting the observers are enormous even without reckoning the handicaps imposed by the resistance of the enemy. The observer must strive to distinguish the fall of shots from each ship . . . a supremely difficult task when the salvos from several ships fall almost simultaneously, directed at the same target. Reporting must be from moment to moment, almost in the form of a running commentary. Reporting would be interfered with, not only by enemy attempts to jam the reports, but by the great volume of the inter-ship wireless traffic.

Scindia brings you wealth by the waters



SISTA'S-SSN 2284

In ancient times maritime trade brought immense wealth to India... Today Scindia ships are carrying on this ancient trade and tradition... Scindia serves the Indian overseas trade as well as the coastal trade with its fast and modern fleet swiftly, safely and economically...

OVERSEAS SERVICES

India-Pakistan-U.K.-Continent
India-U.S.S.R.
India-U.S.A. (Atlantic & Gulf Ports)
India-Eastern Canada-Great Lakes
India-Pacific (via East)
India-U.A.R.
India-Adriatic-Eastern Mediterranean Ports
India-West Asia (Gulf)

COASTAL SERVICES

India-Pakistan-Burma-Ceylon



THE SCINDIA STEAM NAVIGATION CO., LTD.

'Scindia House', Ballard Estate, Bombay-1. Telephone: 268161 (12 lines) Telex: 2205
Central Bank Building, 33, Netaji Subhash Road, Calcutta-1. Telephone: 225842 (4 lines) Telex: 305
60, Jor Bagh Nursery, New Delhi. Telephone: 611291 Telex: 322
Agents in all principal ports of the world.

DEFENCE OF SHIPPING

NOT a 'glamorous chore' though, and alien to the naval traditions of 'daring offensive action', defence of shipping has all along been the primary task of war machine on the high seas. The nature, character, extent and intensity of threats to commerce at sea, and the means of protection against these threats, have changed very greatly in recent years. For instance, very substantive technological changes, not yet generally perceived in their effects on commerce protection and control, have already occurred. Important among them are the vast improvements in sonar and radar propagation, the advent of electronic data processing, the solution of complex problems by computer and a virtual revolution in merchant ship design. Technology has already produced revolutionary advances in the merchant marine. Chief among them are gigantism in ship building and containerisation in cargo-handling. However, the task of the war machines on the high seas, has remained unaltered. Actually, it has increased manifold in its importance, in its scope and in its hazards. This is particularly so because trade has become increasingly international and there has emerged the necessity of transporting 'troops and supplies' to the remote corners of the world to meet the threats posed by the more expected 'brushfire type of wars'. This is in addition to the constant threat of a general war. Even now, there is no slackening of the pace of scientific and technological developments and their impact on maritime forces and shipping general. In consequence to their continuing developments, there has come into existence a new class of specialists called marine consultants whose job is to advise on that best suited to meet any particular requirements. There has also come into existence the concept of total surveillance of the high seas.

CHANGING NATURE AND CHARACTER OF THREATS:—In the good old days, the only way to wage war on the high seas was by surface action. The battle though bloody most often, was simple. Similarly, threats to commerce were relatively simple and needed simple means of protection. With the arrival of the twentieth century, there came the submarine and the airplane and so were developed the sub-surface and aerial threats. So long as these new weapons systems were in their early stages of developments and had limited ranges and fire and staying power, it was found sufficient to devise means of detecting and disposing off these threats separately so that antagonists could get on with the main battle between the mighty gun ships. However, when the sub-surface and aerial threats became more than mere nuisances, special tactics and weapon systems had to be developed to meet them. Then came the time when sub-surface and aerial threats superseded all other forms of threats and the experts on naval warfare were set to meeting them at their developed levels . . . resort to anti-submarine and anti-aircraft warfare. In the post-war years, the submarine and the aircraft has registered numerous further improvements. These improvements have been accompanied by revolutionary advances in electronic devices and computer systems. And still there are clear signs of continuing scientific and technological revolution which will have strong impact on the manner in which sea power will be disposed and ships and shipping lanes protected.

TRADITIONAL MEANS:—Methods of shipping protection which have acquired continuity in history have come to be known as traditional methods. Although constantly supplemented by new innovations and inventions, they have not been completely discarded even in the context of a nuclear general war. They have held their own pride of place in the context of a conventional war, particularly between non-nuclear powers. These methods are:

Blockade:—Even in the olden wars, when closed blockade was possible and practicable, raiders could frequently steal out of the presumably blockaded ports and inflict damage on the blockading naval force. With the close blockade having become extremely difficult, if not wholly impossible, the possibilities of damage by such raiders increased many fold and set the naval authorities to think and devise fresh means of shipping protection.

General Cover:—This was the technique for the direct defence of shipping. When adopted, its application always depended upon the type of the enemy attack feared most, the resources available for meeting those threats and the character of shipping to be defended. Measures adopted against one menace could not necessarily be compatible with the measures adopted against the other. Some incompatibility was always inevitable and in any case means had to be balanced with the ends. However, the shortcomings of this technique were that, the power to afford this type of cover was not restricted to the force capable for or actually commanding the sea. Any naval force placed in a favourable position could afford this type of cover. Further, it was effective only against surface raiders and could be easily dismissed as unimportant when major part of the shipping losses were caused by aircraft, submarines and mines.

Routing:—has been another technique used as a protective device. Its essential elements have been that ships must proceed along a pre-determined route which would be the most likely to ensure safe arrival at the destination. Other elements always taken into consideration have been, (a) The possible and probable nature of the enemy opposition en-route, (b) The weather conditions which would serve best the protective operations and not unduly expose the vessels to weather damages and (c) The oceanographic knowledge of the route selected as the best suited for anti-aircraft and anti-submarine operations. Examined together these requirements could easily suggest that any system depending upon standard requirements would be inadequate and only a highly flexible system could yield the most fruitful results. **Convoy Systems:**—World Admiralties have since given a number of definitions to convoy system. However, the definition which has since gained the maximum acceptance of modern naval opinion is, 'one or more ships sailing under the protection of one or more warships.' In other words, there are two essential requirements for ships thus sailing... that ships must operate in an organised group and that they must be provided with armed escort. For several years now this systems has been used with increasingly gainful results. It has survived the transition of merchant ships, from sail to steam and anti-shipping weapons from smooth bore guns to sub-marine launched torpedos. This system has yet to prove its effectiveness against nuclear weapons. However, naval experts throughout the world are convinced that convoy system will still be the best way to get the ships through safely, particularly when the escorting warships themselves would be equipped with nuclear "shipping protection devices." Further, the experts feel that the effectiveness of the convoy system will be very greatly influenced by the advent of super-tankers and container ships. **Patrol Barriers:**—Patrol and Barriers Forces, as and when judi-

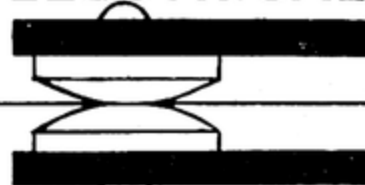
ciously and selectively employed have been generally found helpful to safe passage of ships. Forces since employed have included aircraft, surface craft and even submarines operating in various combinations, depending upon the peculiarities of the situation. Commitment of limited forces, principally aircraft, to patrol transit areas, have been found increasingly helpful in minimising the threats of anti-shipping forces. Submarines, when employed in this role have very often resulted in the loss of enemy morale and much reduced time on stations. Barriers established in the narrow waters, through which the submarines must pass to reach the open seas, have also yielded very fruitful results. This system is very likely to be employed in all conflicts in the coming future. This seems to be the reason that patrol craft are receiving the greatest attention of the experts on sea-war. **Ocean Surveillance:** — The need for surveillance has existed ever since the time man developed the ability to organise resources in support of fleets. Commanders of naval forces have always been critically dependent upon information about the size and location of the enemy forces and their supporting elements. Inherent in naval warfare has been the reconnaissance capacity of every ship and aircraft. However, the requirements of information in the context of modern sea warfare of global dimensions have changed most radically. In the first instance naval weapon systems have grown infinitely more complex and expensive. At the same time, they have become vastly more powerful, but fewer in number. It has, therefore, become important that they are deployed in the most effective manner possible, both in their offensive and defensive roles. It is conceded that truly effective collection, evaluation and dissemination of information alone can permit optimum disposition of naval forces. This information must be complete, must be absolutely accurate and must be available in good time to permit the naval forces to take the necessary decisions and actions. Further, in the context of modern war, this capability must be tied in with world wide systems in support of Navies, the role of the services and other government agencies.

Experts with world's giant navies...the US and the USSR...are already feeling convinced that they are approaching at a headlong pace the day when naval forces will have completely credible intelligence information almost exactly at the time when events take place under, on and over the world's oceans. Further more, task forces and even individual ships at sea will have whatever information needed from the entire strategic picture pertaining to their offensive and defensive missions. In particular, they will have information on any ship or aircraft near enough to bear on their operations. True ocean surveillance will be a great improvement over intelligence as it has hitherto been known. Supported by electronic and computer technologies, naval analysts will be able to assemble pertinent facts almost instantly and arrive at verifiable conclusions with equal rapidity. This type of surveillance will probably be most practicable over international waters. It will be the epitome of intelligence, eliminating all uncertainties and permitting concentration on other things. It will be an important tool of future naval warfare and more effective means of shipping protection than any other to practiced.

FLEET AIR DEFENCE:—It may be, and, perhaps, it is hard to convince portant tool of future naval warfare and more effective means of shipping protection to shipping can be an AAW mission...that submarine can be sunk using AAW missile launcher. However, this is a fact more than established already. One of the principal means available to the navies to protect their



ELECTRICAL



CONTACTS

Made of:
Silver, Gold, Platinum metals
and alloys thereof. Also Tungsten tipped contacts
(Bulk Quantities only)

PHONE: 537 083

RAVINDRA



GRAM: 'CRUCIBLE'

HERAEUS

Limited

SHANTI NAGAR, PIPELINE, VAKOLA, SANTACRUZ (EAST),
BOMBAY-55 AS.

NONE TOO BIG!
NO JOB IS TOO
BIG FOR US IN:



- **ELECTROPLATING**
- **METAL-FINISHING**
- **ANODISING**

**CHROME, NICKEL, SILVER, BRONZE,
BRASS, TIN, ZINC, COPPER, CADMIUM,
CHROMATE PROCESSING**

Barrel—plating, aluminium—anodising and
plating. Auto Motor Bumpers & Guards a
speciality. Remember, it is the quality that
counts! Work carried out to I.S.I., BSS &
ASTM specifications.

KOHINOOR ELECTRO GILDERS

ESTD. 1932

KHETWADI 10TH LANE, BOMBAY-4. PHONE: 351786

power throughout the world and thereby support national objectives and provide protection to ships, and shipping lanes, from hostile attacks is the attack carrier striking force. In carrying out its many types of offensive|defensive missions, it is essential that the carrier task force is able to gain air superiority in the areas of conflict and defend itself from enemy attacks. Without the power to accomplish the latter, the carrier task force will not stay to accomplish its primary task. . . . air strikes against the enemy. In addition to Fleet air defence, the naval fighter|interceptor air-craft have to perform several other functions, all contributory to the protection of shipping. The more important of these functions are. . . . escort of strike aircraft, fighter sweeps, combat air patrol and air-to-surface missions. In order to perform these functions the naval fighter aircraft are required to have sufficient range to accompany attack aircraft to and from the target and endurance capabilities to loiter on combat patrol stations. When over the targets, they are required to defeat the enemy fighter, both in long-range, air-to-air missile exchange and in close in 'dog-fight' situations, using guns and short range missiles.

* ANTI-SUBMARINE WARFARE

EVER since the birth, the threats to shipping posed by submarines have been mounting. There are many in the world navies today who think that submarines would be the only mortal threat to shipping in the coming future. Their opinion is based on the fact that the advances in submarine destructive capability have been revolutionary. As against this the defensive has been only evolutionary. Further, despite all innovations and inventions in anti-submarine technology there is still no categorical defence against the menace of submarines. The chief difficulty in the field of anti-submarine capabilities has been a clear-cut single purpose weapon system. Further, anti-submarine warfare is a programme that is dependent upon far greater knowledge of the oceans, particularly the ocean depths, than it has been possible to acquire hitherto. This lag is there despite the massive programme for ocean studies launched by the US and USSR Navies.

ANTI-SUBMARINE WEAPONS:—Even to-date, the nemesis of the submarines, the destroyer is still the major anti-submarine surface ship in the modern fleets. However, it is only one of the vast complex of ships and weapons, instruments and men that are organised and integrated with the finest team work against the threats posed by modern submarines. As at present, the anti-submarine effort requires the help of entire fleets, entire air force, particularly the helicopters and hover crafts. It is on account of this that every combatant ship in the modern fleets is provided with maximum anti-submarine capability possible under the circumstances. Apart and aside of this, Naval planes and helicopters, shore based and carrier borne, are equipped with special submarine detection gear and a wide range of anti-submarine weapons. In addition to these standard and proven types of ship and aircraft and weapon systems, all sorts of crafts and other devices have continued to be under constant experiment and development. For nstance, several types of hydrofoils have already been under test or construction. The US have even claimed the development of undersea long range missile system.

THE DEFENSIVE VISION:—In order to preserve and enhance the element of surprise, not all the weapon systems developed and the techniques of their deployment are openly declared. This it appears, has been particularly so in the case of anti-submarine warfare. However, as at present, the most advanced navies of the world envisage their carrier strike forces as their first line of defence against enemy submarines. Attack planes from carriers, and missiles launched from submarines themselves, are included high on their lists of priority targets, the principle bases of the enemy. **'Scotch the vipers in their nests and destroy the enemy submarines before they are put to sea'** is the objective in this first phase. The second line of defence envisaged by the modern navies is their own submarine strength, lurking off the enemy bases and coast and utilising radar, sonar, radio, direction finding equipment and other detection devices, full range of which would defy listing, to track report and if possible destroy any outward bound enemy submarine. The third line of defence envisaged is the submarine barriers, varying in composition and type, depending upon the geographical area, the depth of the sea and so on. In general, these barriers are designed to block certain narrow bottlenecks of the sea or to provide listening patterns that may be used for any unidentified submarine passing through the area. The fourth line envisaged are the long-range patrol planes equipped with anti-submarine warfare equipment, based at various outlying bases and committed to covering periodically every segment of the oceans.

OPERATIONAL PROCESS:—According to classical concept, anti-submarine warfare poses four major problems. However, each of these has several subordinate and derivative problems. These problems are, **Detection, Localisation, Identification (Classification) and Destruction**. Although this classical approach to ASW is not wholly outmoded, yet it has already necessitated modification in view of the entry of the high performance submarines into the picture. Faced with a very evasive submarine, the modern anti-submarine warfare forces have been compelled to add one more phase to the classical four... **the attainment of attack position**. Actually, this has become the most critical phase of all.

DETECTION:—The best of ASW weapons would be useless the submarines are initially detected. Initial detection of the submarines is accomplished by several techniques. In the first instance, submarines, are observed when they are initially put to the sea. They are later detected by intelligence agents and sighted by merchant ships and planes as they leave the ports. Listening devices like sonar and other detection gear are set to give running count of the mounting submarine threat. If the enemy submarines are incautious enough surface and use radio, an approximate fix is obtained by means of radio direction finder. Radio direction finders are the familiar loop antennas that, when rotated, indicate the direction and approximate distance of the radio signals received. Sensitive hydrophones, in fixed positions in deep-waters off the coast, and off the coast of advanced bases under certain conditions, pick-up the noise of submarine propellers at distances of hundreds or even thousands of miles. In the days when submarines had to spend considerable amount of time on surface to replenish air and electricity, visual and radar detections were competitive with sonar. Human and mechanical eyes also had their place in ASW, although, it was only as deterrents rather than detectors. Fixed wing aircraft also had its pride of place in ASW. However, subsequent advances in submarines application brought about tremendous reduction in the search capability

of fixed wing aircraft which may still rely on radar and visual sighting. The totality of detection equipment now available to aircraft have made it mandatory that the planes be directed to the area where submarines are known to be, if any, but a chance detection is to be made. Although this does not eliminate the fixed wing aircraft from barrier or screen operations, yet their limited sweep width has made them most unsuitable in other matters. With good dip sonar capability helicopters have proved far more capable of searching relatively larger ocean areas in shorter times. Thermal conditions in the ocean have all along been the greatest limiting factor on sonar performance. Against a ship board sonar, a submarine capable of withstanding a region, where the temperature decreases with increasing depth is often able to approach relatively closer without being detected. Against a sonar with increased acoustic power, a submarine within the isothermal layers, that often occur near the surface, may be detected out to long ranges. The power increases have only slight effect on the ranges capability against a below layer submarines. As at present, there are some methods, that can possibly be exploited to overcome the problems of the deep-sea submarine. More important of them are **variable depth sonar and bottom bounce technique**. The bottom bounce and the convergence zone mode of transmission are generally capable of producing detection ranges, much greater than conventional transmission methods. Because, of the physical limitations, however, they are not necessarily applicable in all ocean areas. Further, the process is not without hazards. The main difficulty is that submarines operate in a medium that is largely opaque to most observational techniques. The ocean itself is a difficult medium even for acoustical techniques because sound attenuates rapidly through water, thereby limiting the effective listening ranges. Secondly, the ocean is by no means a homogenous medium. Temperature varies considerably from one another, from one place to another place in the oceans, from season to season and to a lesser degree from day to day. Velocity of sound in water, is, therefore, changed and is, in addition, influenced markedly by increasing pressure at which the temperature drops sharply. Finally, the sea is a very noisy place. In addition to the substantial background noise caused by the surface conditions of the oceans, the noise is also produced by all sorts of maritime life. This in many cases, can have all the accoustical appearance of submarine. To get at the problem a very thorough knowledge of the ocean depths is needed.

LOCALISATION:—Once the general area in which the submarine is operating is known, a vast variety of techniques are used to localise the contact. Despite the several revolutionary advances made, there are still more problems than solutions in the field of localisation. One of the causes of this state of affairs is the tendency to stubbornly hold on to the concept of specifying equipment accuracies, as some percentage of ranges and some fixed bearing errors. With short range weapons, such as depth charges, hedgehogs or weapons Alfa, this sort of specification may not harm, since it is of the same order of magnitude as other errors which enter into the fire control problem. However, with increased detection and attack ranges, localisation error is specified in absolute terms, small enough to ensure that the target motion is solved and the weapons are placed within the limits of effectiveness. Apart from these, there are several other causes of localisation error. The more important among these are poor equipment calibration, operator inaptitude, environmental conditions and system alignment errors.

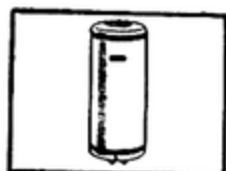
As at present, among the various means for localisation or tracking, the most important are, ship sonar, ASW carrier using helicopters equipped with dunking sonar, fixed wing aircraft dropping sonobuoys or magnetic anomaly detection gear, torpedoes and depth charges and finally, shore-based patrol planes equipped with radar and similar detection gear. Other devices that are indicators of submarine presence and are used to assist in localisation, rather than detection, include infrared sensors mounted on aircraft or helicopters. These sensors pick up, at short ranges, the hot exhaust gases from the diesel engines of conventionally powered submarines running on or near the surface. These sensors also have the capability of detecting the warmer waters or turbulent waters that a submerged submarine generally leaves in its wake. Ionised exhaust gases, or contamination in the air from conventional submarines, can also be picked up by electronic device called 'sniffer gear'. Radar, particularly doppler radar, which senses motion, also has special use against submarine running at relatively shallow depths. Radar waves do not penetrate water to any great depth. However, when these electronic waves bounce off the surface of the sea the shallowly submerged submarine reduces the strength of the returning electronic echo. The MAD (Magnetic Anomaly Detector) Gear, carried in patrol or carrier-base aircraft, uses the earth's magnetic field as the background for its detective works. Sudden changes or anomalies (literally deviations or irregularities) in the normal magnetic patterns are indicated by this instrument, if a plane using it passes close above the steel hull of a submerged submarine. At very close ranges, this device is quite accurate. However, it is most useful in magnetically well charted areas and in narrow waters or to identify and clinch a contact already made by other means. Supplementary to these detecting instruments are search radar, mounted on surface ships and planes. This radar has been claimed to be accurate and discriminating enough to pick submarine's periscope or snorkel's heads at some distance. However, it would require a skilled operator to distinguish submarine in many blimps of light caused by the phenomenon known as 'sea return' that obscures the radar scope.

Major difficulty in the field of localisation is the noise generated by the ship machinery. Most ships, particularly when moving at high speeds, are noisy. Propellers thrash about in water and a phenomenon known as **cavitation...the creation of a vacuum just behind the propeller blades...** adds to the commotion. Each type of ship, in fact every individual ship, has a distinctive sound signature. Theoretically, a good hydrophone operator can sort all these out and distinguish one from the other. Practically, however, the difficulty is that there are thousands of sounds in the oceans and the practitioner's ear, and even a sophisticated computer, with electronic memory units stored with comparative signatures, is sometimes not able to distinguish the snapping of the ships from the noise made by a propeller miles away. Much depends in this long range localisation upon the conditions of the movement, the noise level in the ocean at the time, the thermal layers and the distinctiveness of the ships signature. For all these, such long range detection systems vary greatly in accuracy. Generally, they can be depended upon to provide only area location. Their effort has to be supplemented by such means of localisation as planes and helicopters, flying regular patrol from the decks of ASW carriers and carrying dunking sonar and surface ships equipped with ASW capability.

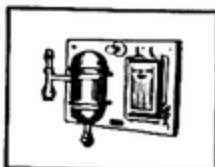
IDENTIFICATION:—When the submarine is located with sufficient precision, it has to be distinguished and identified before destruction weapons are launched. This may seem simple and easy. However, in actual practice they are far from it. Even if all the indicators show that what is down below, hidden from human sight in the invisible ocean depths, is a submarine, the search forces have to make sure that it is an enemy submarine...not one of their own. This is a difficult process of elimination. The hunting forces have to be kept fully informed of their own submarines and they have to be familiar with their signatures. It is only when they have no submarine of their own in the search areas and if the signature obtained does not match the known signature, then alone the search team can be sure that it has a real live enemy on its hands and the grim game for tracking can be started. Until recently, very little progress had been made toward the solution of identification or classification problems. The sonar operator had to rely on his memory of the sounds that he had heard at the school, sounds that he had heard before at sea and some form of intuition to arrive at his identification or classification. However, over the past few years electronic laboratories of the advanced navies have devised far more systematic and yet simple programmes by which a trained operator can analyse his clues and arrive at a fairly accurate identification or classification. The process is still continuing and it would be difficult for anybody to guess or predict what will be available in the coming months and years. Latest reports suggest, the advanced navies are already near perfecting devices in regard to nuclear submarines which move so fast and so deep. Already they have nearly perfected the establishment of "sea lanes" to avoid under water collisions.

DESTRUCTION:—Destruction or kill is the final test of an ASW system or tactic. If no kill takes place then all the earlier steps lose their value. In a cold war situation, simply forcing an unidentified contact to surface may be considered a successful outcome. In a shooting war, however, sinking of the submarine alone would constitute the ultimate act. When a submarine is finally detected, localised and identified, there are a vast variety of weapons launched from aircraft, helicopters surface ships and submarines themselves, to ultimately kill the enemy submarine. Hunter killer submarines operate independently off an enemy's submarine port, along submarine sortie routes or anti-submarine barriers. They use either homing torpedoes that spiral in narrowing circles, seeking prey by focussing on the sound of the enemy submarine propellers or wire guided torpedoes which are usually guided to the target from the launching ship by thin wires unreeled from the torpedoes as they neak through the sea or by submarine rockets (SMROC). Surface ships use great many different weapons which include, shore and long-range guns and hedgehogs, so called because their quillike look. The aircraft use a variety of weapons which include rockets or conventional and nuclear depth charges or high speed homing torpedoes. More effective weapon system have all along been under contemplation and development to make the 'kill' a certainty. Under the circumstances, it does appear that there would be no ceiling of inventories.

Wellknown **SPHEREHOT** Products



Automatic Water Heater



Instantaneous Type Water Heater (Geyser)



Automatic Iron



Alkali

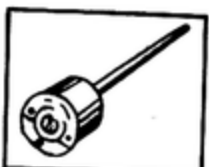
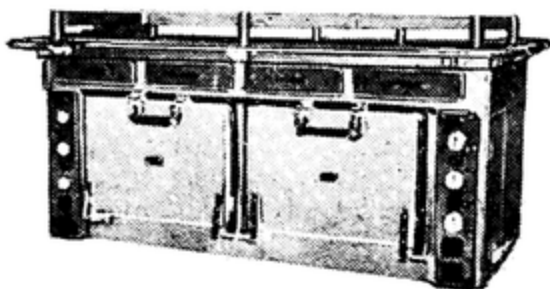


Water & Oil

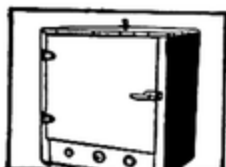


Sheathed Kettle Element

**HEAVY DUTY - COOKING RANGE
FOR MARINE USE OR FOR HOTELS**



Thermostat



Laboratory Oven



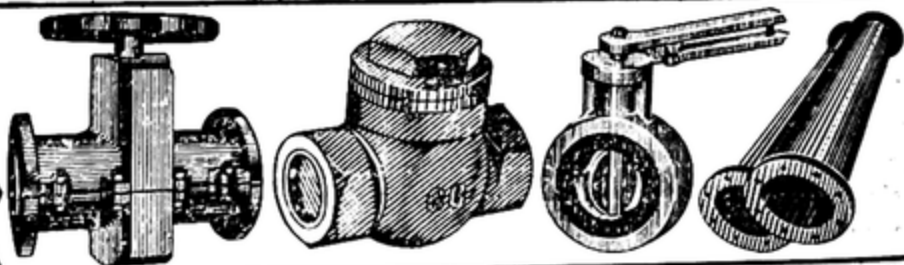
Automatic Toaster

MANUFACTURED BY— KANTILAL CHUNILAL & SONS PLOT No. B 48/51, INDUSTRIAL ESTATE,
UDHNA, (DIST. SURAT) TEL. 88419-TELEX-O18-211

BRANCH OFFICE— 80/82, VITHALWADI, KALBADEVI ROAD, BOMBAY-2. • TEL. 314200 • TELEX O11-3051

IN THE SERVICE OF THE DEFENCE FORCES OF INDIA.

By supplying valves, water main pipes & pipe fittings to the defence forces, 'General Tubes' is contributing its humble mite in the service of the nation.



THE GENERAL TUBES (PVT.) LTD.

142, 144, Nagdevi Street, Bombay-3

Phones : 328390,

Grams : "GENTUBES"

Apex-Kadam

MINE WARFARE

RIGHT from the date of innovation, the primary purpose of mine warfare has been to deny the enemy the use of certain areas of seas and thus endanger his shipping as far as possible. As such, mines have proved to be one of the very few weapon systems in the armouries of nations which have shown the capabilities of accomplishing missions by their very presence. In consequence, mining and counter-mining has all along been an important part of naval technology. The lessons of the Korean War have further increased the importance of this technology and there is no Navy in the world today which does not consider it an essential and integral part of its staying power in the context on the high seas.

Some Naval theoreticians have considered mine warfare as merely defensive rather than offensive in nature. However, they have also admitted that the distinction is not a very precise one. In fact mines have both offensive and defensive roles. In both the roles, mines are used to bottle up enemy harbours and render strategic shipping routes dangerous or even useless for shipping. Over the past years, mine mechanism has registered revolutionary advances. This has been particularly so in the field of firing mechanisms, anti-sweep devices and sterilizers. This covert weapon has become all the more formidable because it can be positioned by surface, sub-surface or aircraft delivery systems. The process has not ended. In fact further advances are being registered and will continue to be registered to meet the requirements of the ultimate weapon systems being introduced in the field of sea warfare.

SEA MINES MAIN CHARACTERISTICS:—Sea mines have numerous peculiar operational characteristics. However, following are cited as the more important ones: (a) The first and most singular characteristics of the sea mine is that it is a weapon which waits alone. It is an error to compare it to other weapons which require human direction. (b) Sea mines have the capability to release, bulk if not all blockading forces for other duties. Even in cases where blockade by ships may be resorted to, mines can reduce the size of the areas to be covered by other units, and can provide temporary complete closures even if the ships or aircraft have to depart for a few days. (c) One of the most overlooked and under-rated of the remarkable features of the mine is its ability to render itself harmless at a pre-set time, this can be done with an exceptionally high degree of reliability. Thus, it is ideal for use as a temporary measure whenever this is required. (d) Sea mines can afford their owners a certain amount of confidence and leisure, when their deadly crop has been sown. For want of a more precise term, it might be said the sea mine confers "selectivity". This selectivity can be honed to a very fine edge, if need be. Equipment and tactics can be very simply enforced so as to attack only submarines, only surface ships, or only deep draft ships. By far the greatest selectivity can be produced by open announcement of the presence of the field. Speculation aside, an announced minefield is a singular weapon whose threat may be undeterminable but challenge to which would be perilous indeed. (e) Permanency is, perhaps, the most overlooked property of the naval minefield. Yet it is the most peculiar characteristic, shared with the land mine. However, permanency is not invincibility. (f) Much has been written and said of the mine as a good weapon for an inferior naval power. However, in reality nothing is more

fallacious than this contention. If mine is effective in the hands of a naval power which has very little else, how much more effective can it be, when used by a nation possessing many other options? The flexibility afforded by a solid and diversified mining capability greatly increases the value and utility of other weapons at the disposal of a greater power, (g) A final property of the sea mine is (or at least can be) **anonymity**. This is a fairly delicate matter, in very specialized cases, however, with the clandestine support of another country, mines can be easily manufactured which can bear no trace of their origin. Any minefield has a good measure of anonymity unless it is announced. (h) There are a number of arguments against the use of the sea mines. They include the relatively low effectiveness, the normal stigma and possible political problems, the two edged nature of minefield, the lack of delivery agents, and the slow reaction. However, mines can provide other values such as psychological shock. The mine is a mindless thing and hence produces a very different psychological impact from a manned weapon. This is a very important factor in mine warfare. (i) Surprise is the great intangible of warfare. Its value is so well known that it is considered as a fundamental principle of warfare. To create surprise, mines can be planted in areas long before arrival of the enemy. The presence of mines is unlikely to be understood until damage has occurred.

LIMITATIONS:—Sea mines, to be effective, have certain criteria that must be met. In the first instance, the mine is passive weapon which must have the target come to it. Therefore, mine must be in the area of target density to be effective. The second factor, which limits mine employment is hydrographic environments. Till recently, mineable waters were considered those whose depth did not exceed 100 fathoms. However, this figure is now considered somewhat arbitrary by some naval experts because the development and use of special mooring devices, and other techniques have already permitted mining of waters of greater depths. The third factor is the hydrographic considerations of tidal activity and ocean currents. These factors are of significance, primarily in respect to the moored mines. However, the limiting factor of tides currents are not always unsurpassable. In an offensive role, the surface minelayer has limited application, since it has to operate in areas normally held by the enemy, certain remote areas, which may be under close surveillance of the enemy, may lend themselves to a surface minelaying effort, though this means of delivery would not always offer much potential.

MINING AND COUNTER MINING OPERATIONS:—Modern trend in mine warfare has been away from the specialised surface minelayer types of craft, which had their greatest usefulness in World War I. Now most of the mine laying, particularly in combat areas, is done by aircraft of patrol or bomber type or by submarines specially fitted for minelaying. Surface minelayers, with their larger capacity, still have usefulness in non-bombardment areas in laying extensive defensive mine fields against enemy submarines or surface ships. Countermining, or minesweeping operations also now have major technical complexities. The submarine and aircraft have proved to be the most effective vehicles available for offensive mining role. However, the best system to use either submarine or aircraft, depends on the distance from the base of operations, enemy defences in the area and to some extent, the approaches to the area. A mine plant by submarines requires the submarines to transit shallow waters, through extended approaches, limiting grievously the evasive techniques. On the other hand, aircraft drops in relatively confined areas present a

difficult problem of extremely precise navigation over areas of potential enemy air warfare capabilities. The choice of delivery system, is, therefore, always dependent upon actual or expected enemy defences and accessibility and configuration of the area to be mined.

As at present, minesweeping Naval forces include, both ocean going ships, large enough to keep the areas with the combat ships of the fleet and shallow-water coastal ships, designed for inshore work in amphibious landings or operation close to the beaches. Most of these sweepers are now non-magnetic, carefully built of wood or non-magnetic materials (including tools, anchor chains and engines) or with their hulls equipped with 'Degaussing' (demagnetising) apparatus. All naval vessels in the leading navies now have degaussing apparatus, most of it built into the hulls of the ships. This apparatus passes electrical current through the hull to eliminate detector used in ASW work, or to reduce magnetism. A magnetic mine, like the magnetic anomaly, reacts to change in the earth's lines of magnetic force represented by a steel hull passing near it. Degaussing reduces this anomaly or change, and hence reduces, though it does not entirely eliminate, the danger of detonating a magnetic mine. The sweepers are aided by mine hunter craft... small vessels that use electronic and sound devices to hunt mines in the water. Helicopters, some equipped with cameras or televisions and underwater demolition divers are used to supplement these units.

Once located, mines can be destroyed by numerous means. Heavy explosive charges can be detonated near the mines to use "sympathetic" explosions. Scuba Divers can actually attach demolition charges to mines, and blow them up from a place of safety, or alternately, they can remove the detonators. Rendering the mines inoperative is obviously a ticklish business. However, leading Navies of the world have developed a non-magnetic tool that does not permit a magnetic mine to detonate. For a long time, the researchers were stymied. It was because most of the materials available were not strong enough, were liable to bend or break or quickly corrode in salt water.

The Sweepers usually bear the brunt of counter-mining activities, since it is rare that an enemy minefield can be completely detected and charted by any other means currently known. The job of the sweepers is plodding and dangerous one. Some of them have to stream paravanes, which are dolphin or torpedo shaped objects designed to ride under the surface. They are attached to the sweeper's bow by wire cables, one on either side, and as the sweeper moves, this makes a giant V pattern through the water. The cables engage the cables of anchored contact mines, which are cut by wire cutter jaws on the paravane. The mine bobs to the surface, and can be detonated by gunfire. Against acoustic or magnetic mines, other counter mining methods are employed. Noise making devices... one of them a kind of giant water hammer called a **Hammer Box**... are used by some sweepers to actuate the acoustic mines. Magnetically charged cables streaming between two sweeper or dragged by one, detonate the magnetic mines. World Navies, it appears have still to solve completely the problem of the pressure mines. One of the expedients envisaged by U.S. Navy has been the conversion of large Liberty type merchant ships for mine sweeping duties. The ships are equipped for remote control so that they can be operative from an armoured shock-mounted, heavily protected bridge by a skipper and a few men. Holds are fitted with **light buoyant styrofoam**, a kind of foam rubber material and the ship can plod back and forth over the same waters until the mine is detonated or is sunk by a pressure mine.

warm comfort in the icy blast

Sun Vacuum flask gives
the Jawan the warm comfort
he needs while guarding
our icy frontiers.

A sturdy flask of rugged
construction in positively
non-rusting alloy with an
unequalled thermal
efficiency.



VACUUM FLASKS
serve you better

VICTORY FLASK CO. PRIVATE LTD.,
BOMBAY • CALCUTTA • DELHI • MADRAS • HYDERABAD

Makers of India's first vacuum flasks—and still leading!



CHAPTER X

SEA POWER

... POST-WAR NAVIES

THE NAVY OF THE UNITED STATES OF AMERICA emerged from World War II as the largest and the most powerful naval force known to history. Flushed with this power element, and dictated by the peculiar circumstances, it immediately assumed the role of world policeman on the high seas. However, in the post war years, three most significant developments in the world naval force structure have taken place. They have necessitated the most serious ever rethinking on the future of world sea power. In the first instance, the Soviet Union which, immediately after the close of the war, was a maritime non-entity, has emerged as a first class naval power, in many cases and in many ways, much more powerful, and with far more effective global presence, than its US counterpart. In the second instance, some of the countries which, immediately after the close of the war, were politically and economically unstable, have become reasonably healthy and viable with much increased and dependable defence potential on the high seas. Already, this has led to a renewed interpretation of the 'blue waters strategy'. This new strategy is being reflected in the increasingly pronounced tendency on the part of the power giants to transfer greater and greater defensive responsibilities to the 'growing in strength countries' and surrender of what has since come to be known as the strategy of 'unilateral world policeman'. The third major development has been the resort to the construction of smaller but more sophisticated forces whose presence will not be as visible as in the past. Major technological developments during this period, which have had revolutionary impact on maritime warfare have been the development of atomic energy, turbine gas, nuclear weapons and missiles. The most encouraging development to-date has been their bubble craft ... a craft in which a twin hull of catamaran design is employed, the space between being sealed off by pannels and cushion of air under pressure being created therein. The vessel travels on the bubble which as the effect of reducing surface friction and enables higher speeds to be obtained for given horse power. The problem, however, has been how best to use the developments, particularly in the context of cost effectiveness.

CURRENT DEVELOPMENTS:—The Advantages of **Atomic Energy** for ship propulsion have since been well known. However, the cost of installation has been rather prohibitive and not many warships even in the giant powers navies have since been provided with Atomic Energy. **Gas turbine** propulsion has been rapidly gaining favour on account of its instant readiness, light weight per horse power output, small demands on man-power for operation and easy maintenance and replacement. It has been particularly suitable when high speeds have been required. **Nuclear weapons** also have had obvious advantages. As compared with aircraft borne weapons the missiles have demonstrated the great disadvantages that, once released, they cannot be recalled, though provision can be made for their destruction in flight by radio command. However, the advantage has been that missiles can be carried by ships very much smaller than carriers and by virtue of the homing device in the head, they have shown very high probability of hitting. For the last fifty years the rifle, and breach loading gun had been the principle surface-to-surface weapons. However, they have, of late, been increasingly replaced by **surface-to-surface missiles weapons**. Generally speaking, more sophisticated the system in the missiles, the larger they have been, but smaller have been the installations required in the launching ships. This has been true also in the case of surface-to-air and surface to-sub-surface missiles. In the field of **anti-submarine warfare**, the most significant developments have been the introduction of such weapons as **Asroc, Subroc, Malafon, and Ikara** in which an air trajectory is used for transit between firing ship and the target. However, these weapons have not yet become standard equipment even in the navies of Europe. Further the numbers of such weapons which can be carried in any one ships has remained limited. Therefore, ships in which ASW is the primary role have been equipped with helicopters capable of investigating such reports and attacking up when confirmed. Indications have been that submarines may soon be equipped with the means of counter-attacking the very vulnerable helicopter and, therefore, reliance may have to be placed on the use of ship launched anti-submarine missiles.

FOR ALL YOUR REQUIREMENTS OF

- * **ALUMINIUM EXTRUDED SECTIONS**
- * **SHEETS COILS AND**
- * **ALUMINIUM FITTINGS**

Contact

Allied Aluminium

46, BHULESHWAR ROAD,
BOMBAY-2.

- * **Specialized Suppliers In Anodized Materials**
- * **Distributors of Sheet Metal Screws**

Phone : 3 3 4 9 8 0

U.S. NAVY

AT the close of World War II, the US Navy had some 68,934 warships, vessels and crafts of all sorts in commission. This grand total included 99 aircraft carriers, 23 battleships, 73 cruisers of various types and 737 destroyers escort and 234 submarines. It was indeed the largest and the most powerful fighting machine on the high seas that the world had ever known. In the words of Captain Robert H. Smith of US NAVY, "At the conclusion of World War II, the US Navy, rich with prestige and honour of victory, bestrode the world's oceans like a colossus. It was supreme, its new challenges still awaiting, invisible beyond horizons of time." However, immediately after the war many Americans, including war planners of the future, thought that the Navy which had helped so significantly to defeat the German submarine menace in the Atlantic and had swept the Japanese from the seas and ultimately scored a victory, the size and scale had not been known to world history earlier, had worked itself out of job. Air power, and later Aero-space power, enthusiasts thought that the peace of the world could be maintained by a few Americans, flying a few bombers carrying a few atomic bombs and still few American firing still fewer rockets and missiles. / The navy, as it had been known to the Americans had nothing to fight.

According to George E. Lowe, the neglect of the fleet in the post-war years was dictated by an almost total obsession with the unusable land based nuclear weapons. However, the top leadership of the Americans still continued to swear by 'sea power as the first line of defence and the surest guarantee to freedom and peace in the world'. This was evidenced by President Kennedy's assertion who summed up his hard won wisdom on the utility of mobile naval power by declaring, 'Control of the seas means security, control of the seas means peace, control of the seas means victory. If there is any lesson of the twentieth century, especially of the last few years, it is that, in spite of the advancement in space and in the air, this country must still move safely across the seas of the world. Knowledge of the oceans is more than a curiosity, our very survival may hinge on effective presence in all the oceans of the world.' A time then came when the US top Naval brass had to concede that, 'Gone are the days when the US Navy was supreme in the world. If not already, it is perilously close to being second to the USSR Navy at the global level. In the Pacific, it is very near to surrendering its absolute superiority to the Chinese. The future is unpredictable. However, it would be hazardous assertion to say that the days of absolute superiority will come back to the US Navy.'

THE LEADER FORCE:—Despite the decline in the importance and significance of Navy as instrument of US foreign policy and guardian of world peace, the country assumed the leadership of an alliance of inter-oceanic community of free nations that had major maritime interests and were dependent on the freedom of the seas for their very existence. In the context of this role, the objectives of the US Sea power were declared to be; (a) To protect the territory and independence of the United States, (b) To deter the outbreak of World War III, (c) To protect the territories and independence of the allied and friendly nations, (d) To preserve the vital overseas interests of the United States and (e) To maintain normal oceanic trade so that the United States and other peace-



WITH
OUR
WARMEST
GREETINGS
TO

ALL OFFICERS
AND MEN OF

* ARMY

* NAVY

* AIR FORCE

AND

AUXILIARY ARMS

METROPOLITAN SPRINGS PVT. LTD.

ANTOP HILL (WEST), WADALA, BOMBAY-31.

MANUFACTURERS OF :-

LEAF AND COIL SPRINGS AND REAR AXLE SHAFTS

Phone : 442003-441236-441056

Grams : HEAYDUTY (M.T.)

ful nations may receive and ship raw materials and finished goods without hostile intervention. In order to accomplish this the US declared itself irrevocably committed to a Naval forces, with most powerful offensive and defensive capabilities... surface, sub-surface and aerial covering the widest possible spectrum and able to move to any part of the world and to keep it in constant combat readiness to accept and throw back all challenges.

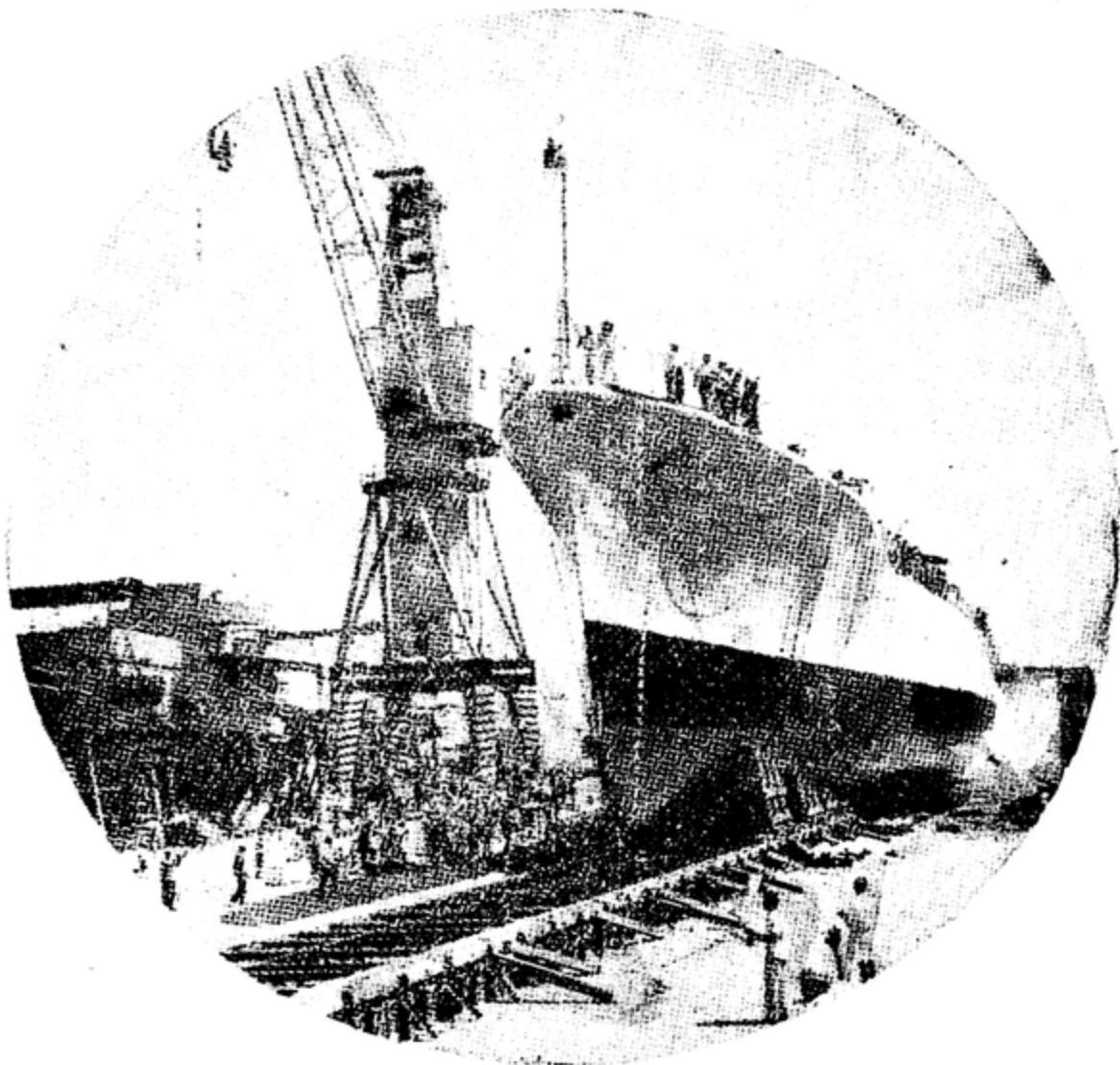
FIRST POST-WAR CONSTRUCTIONS:—The post-war period in the US opened with drastic reductions in warship strength. In the year 1945 itself, the US Navy cancelled the construction of 10 fast carriers, 16 escort carriers, one fast battleship, 24 cruisers of various sizes, 47 destroyers and 6 submarines. It also destroyed in tests, or scrapped otherwise, hundreds of old ships, many of them bearing the war-time scars. Above all, it placed in reserve 'mothballed' thousands of wartime ships, some of which had never even fired a single shot in anger. So rapid and massive was the process of reduction that the US public opinion was askance if the Navy will exist at all. But then came the process, limited though, of reconstruction. The first post-war ships built in the United States were under the so called 'Guppy' (Greater Undersea Propulsion Project) and its sole objective was to improve the underwater performance of the existing submarines. The first large scale ship building programme was begun in Fiscal 1948. This programme called for one heavy carrier, five anti-submarine ships and three submarines. The construction of the carrier named 'United States'... the largest warship ever to be undertaken for construction... was cancelled barely five days after it was laid down on April, 19, 1949. While thus, the US Navy's first effort at post-war carrier construction failed, it was more successful in initiating the construction of new anti-submarine ships. By the end of 1950s, the US Navy had completed the construction of five frigates and ten submarines. The ships, apparently very small in number, allowed the Navy to advance technologically in two important categories... the large surface screening ships and submarines.

KOREAN WAR AND AFTER:—The war which broke out in Korea was the very first limited conflict of the post-war period. Immediately, the significance and importance of the war in the context of 'effective uses of sea power' was not fully realised. According to **Captains Malcom W. Cagle and Frank Manson**, the co-authors of the famed book, 'Sea War in Korea', throughout the period of conflict and for sometime even thereafter, there was a tendency in military circles to dismiss the Korean War as one so artificial, so anachronistic, unorthodox and hedged with restrictions that any study of it was unprofitable, and more likely to impress the students of warfare with wrong conclusion than right ones. However, as the US Navy moved away from the Korean War, it became increasingly obvious that war had wrought tremendous changes upon naval thinking, naval developments, naval strategy and naval policy. In every field, amphibious, logistical, aviation, operational and planning... the impact was monumental. Actually, it was realised that Korea had been the naval proving ground. Its lessons, some still undigested, and its significance, still largely unappreciated, were found unconsciously erupting and disrupting the Fleet.

Summing up the lessons of Korea, the US authority ultimately conceded that whatever the impressions earlier, the lessons were of the highest significance. It was Korean War which initiated progress in the field of amphibious warfare which had been stalled by between-the-war years. It was the Korean War which revitalised naval aviation and re-emphasised the importance of mine war-

The Advent of building Warships in India, has seen the rapid growth and expansion of the indigenous and Ancillary units of the country. No doubt, this has contributed a great deal to strengthen the country's economy and taken it a step further in becoming self-sufficient in Defence needs.

Mazagon Dock Limited, India's largest Shipbuilders and the first to build warships for the country, are, with their 150 years tradition of shipbuilding skill, making their humble contribution towards this gigantic task.



MAZAGON DOCK LTD.

BOMBAY-10 D.D.

INDIA'S LEADING SHIPBUILDERS,
SHIP-REPAIRERS AND ENGINEERS.

fare. It was in consequence of the vital role that the US Navy was called upon to play in the conflict that hundreds of ships and auxiliaries were taken out of the 'Mothball Fleet'. New constructions were also authorised. The most significant inclusions in the new programme were, an attack carrier '**Forestall**' and ocean going escorts. Every subsequent programme included these ships. At frequent intervals, the designs of these ships were improved to ensure greater size and enhanced combat capabilities. The construction of submarines was also continued. Lessons of the war were later reflected in the construction of mine and amphibious ships. The new ships were constructed with greater troop and cargo carrying capabilities and much enhanced facilities for rapid loading and unloading. Korea had seen the use of helicopters in combat. The whirly birds had proved particularly valuable in hunting mines, rescuing downed aviators and transporting cargo and troops. The practical experience of the war later led to the development of amphibious ships designed to employ helicopter in assault landing craft. Finally, the war showed the need for larger and faster logistic support ships.

NUCLEAR RETALIATION:—Apart and aside of the impact of the Korean War in Naval thinking, planning and construction as above, the post Korean War period was marked by a policy of strategic retaliation in which the United States attempted to draw a line around Communist Asia, as had been done against the Soviet Union in Europe earlier. The political policy was reflected in the construction of large strike carriers and screening ships to operate them. While the construction of strike carriers represented the policy of the nation, the weapon system, electronic and power plants of these and other new ships represented the nations advances in technology. It was during this period that world's first nuclear powered surface ship...the largest of the screening ships in the world and the most expensive in entire naval history...was planned. Apart and aside of this, effort was directed to the construction of nuclear powered submarines.

While the development of the US Navy in the first half of the period was concentrated on nuclear retaliation forces, some attention was also paid to the build up of amphibious forces in the second half of the period. Helicopter, which had played a major role in the Korean war led to the development of the Helicopter Assault Carrier. As the US continued her effort for amphibious warfare shipping in a big way, the further developments that came about cate-

On Govt. Municipal and Railway List

Phone : { Off. 338873
Res. 357570

MILAN TUBE-TOOLS CORPORATION

116, NAGDEVI STREET, BOMBAY-3, BR. P. B. No. 3079

AUTHORISED DISTRIBUTORS :

Dunlop Transmission Belting, Conveyor Belting, V-Belts, Hoses, Trolley Wheels and Adhesives.

STOCKISTS :

Asbestos Goods, packing Jointing, Tape packing and Mill Boards.
Dowidat - Tools, Jasons Drills, Warrior Tapes and Dies.

IMPORTERS STOCKISTS OF :

Pipes, Boiler - Tubes, Seamless Pipes and All Kinds of Fittings.

gorised these ships into Amphibious Assault Ships (LPH), Amphibious Transport Docks (LPD), Amphibious Flagships (AGC), The Landing Ship Docks (LSD), Landing Ship Tanks (LAST), Assault Amphibian Personnel Carrier (LVT), Landing Support Vehicle (LLW), and Landing Craft Assault Ships (LCA). Still further developments in the same direction were the Fast Combat Support Ships (AOE) and AFS and series of Research and Experimental Ships, the first post-war survey ships (AGS), first series of Oceanographic Research Ships (AGOR) and experimental Hydrofoil Submarine Chaser (PCH)...the deep diving experimental submarine design concept for anti-submarine ships. The period of nuclear retaliation was thus marked by the development of a powerful force of strike carriers, with their screening ships and missile firing submarines. Later in the period was an effort to obtain improved amphibious and logistic support ships.

LIMITED WARFARE PERIOD:—1960s opened with **John F. Kennedy** assuming the Presidentship of the US. Under him the concentration on nuclear retaliation forces increased still further. So much was the concentration that within weeks, the new President ordered construction begun on the **Polaris submarines**. By 1963-64, the Administration had obtained authorisation for the provision of an operational force of 41 submarines by mid 1967. Development was also concentrated on **C-3 Poseidon** announced in January, 1965, as the successor to Polaris. However, in contrast to the speed of the Polaris submarine programme, there was some hesitancy in carrying on with the already delayed large strike carrier programme. Although the requirements had been accepted in early 1964, the actual CVA-67 programme was begun in the fall of the same year. There were several other developments in the US nuclear capabilities. However, in the meantime had dawned what was known as '**limited warfare period**'. Ultimately, therefore, the major contribution of Kennedy administration to the American sea power emerged to be sharp increases in anti-submarine and limited warfare capabilities. The same programme was pressed under **Johnson Administration**. The most significant additions to the US Navy in this regard during this period were escort ships, small patrol crafts, Hydrofoil Submarine Chasers (PCH), The Fast Patrol Boats (PTG), Motor Gun Boats (PGN), Hydrofoil Gunboats (PGH), Submarine Tenders to service Polaris submarines, Destroyer Tenders (AD), designed to support anti-submarine ships with missiles helicopters and submarines (AS) to support nuclear powered attack submarines.

NIXON'S DOCTRINE: — After Nixon coming to power, the US '**Blue Waters Strategy**' has been enshrined in what is known as '**Nixon's Doctrine**'. Outlining the main contents of the Doctrine, President Nixon in an interview published by the Secretary of State, William Rogers, declared the US posture today was one of lowered profile and reduced presence, consistent with security considerations. It meant putting more emphasis on regional co-operation, making other nations realise that they must take the lead in carrying out the responsibilities in their areas. This policy was based on the realities of the world situation. First of all, the mood of the country had changed. There was little support for the United States continuing to act as unilateral policeman of the world. Secondly, many countries of the free world which politically and economically unstable two decades ago, when we took on this role, were now reasonably healthy and viable. Thirdly, there were pressing internal needs of our country which required a reduction in the resources that we could devote to our military force structure. While this foreign policy posture denied any-

significant retrenchment towards isolationism, it advocated a quantitative reduction in our military strength and activities abroad. Thus our military forces in the 70s would be smaller. However, they would be more sophisticated forces whose presence on the international scene would not be as visible as in the past. Concurrently, however, there was another trend of great significance to our discussion...the announced determination of the Soviet Union to establish and maintain a world-wide maritime and naval presence. Taken together, then one might conclude that Soviet expansion in the face of an American policy of political and military retrenchment may result in a diminishment of the world importance of American naval and commercial maritime power. On the contrary, these two trends indicated that the final decades of the century will and must witness the resurgence of American maritime spirit and commercial enterprise at sea and that this rebirth will require the continuation of the existing US Naval predominance of the world's oceans. If America's presence on the ground or with land based air force overseas was to be ruled out, it seemed to me that the next decades will present increasing opportunity for American maritime and naval power to substitute a sea based forces in support of the allies.'

CURRENT DEVELOPMENTS:—Writing on current development in Maritime Forces, particularly in the United States, **Vice-Admiral (Retired) B. B. Schofield** of the British Navy has maintained the following major current developments. The new US Chief of Naval Operations has proposed to reduce the number of carriers now in service by four. He has also ordered a study to be made of the feasibility of building very fast carriers using the captured air bubble principle. The new carrier '**Chester W. Nimitz**' was proposed to be commissioned shortly. The keel of the US Navy's third nuclear powered carrier **US Dwight D. Eisenhower** was laid on August, 15, 1970 and she was due to be completed in 1974. The budget for the fourth nuclear powered carrier CVAN-70 was approved by the House Armed Services Committee. There has been a rearrangement of the capacity of the amphibious lift. Under the new arrangement only 20 knot ships are to be used in Pacific and Atlantic with the result that the Pacific lift will remain at one MEF but the Atlantic would be reduced to two-third of an MEF. As a result of this change, a large number of general purpose assault ships (LHAS) will be built and the slower amphibious ships will be gradually phased out. Following amphibious ships have already been commissioned: (a) Austinclass LPDs Coronado, Shreveport, Nashville and Trenton (b) Anchorage-class LSDs Portland and Pensacola (USS Vernon and another unnamed (LSD-40) were due to be completed by late 1971 or in early 1972). (c) Newport-Class Fredrick, Tuscaloosa, Saginaw, San Bernadino, Boulder. (d) The Amphibious Command ships, USS Blue Ridge and Mount Whitney. Work has been completed on the nuclear powered cruiser USS Long Beach which was taken in had for modification of her SSP 32/33 Scanfar Radar System. (e) The with-holding by the US Congress of funds for the conversion of the six fleet ballistic missiles submarines scheduled to receive the Poseidon missile in 1969 has necessitated the recasting of the programme as follows: two in 1968, two in 1969, six in 1970, seven in 1971, six in 1972, five in 1973 and three in 1974. Total of 31 to be converted by 1975, as originally planned. (f) Under a project known as ULMS (Undersea Long-range missile system) the US Navy has been considering the design of a successor to the existing FBM submarine. In mind has been a vessel of about 8,000 tons armed with 20 to 24 long-range advanced-type missiles in. (g) In view of the ever-increasing threat from Soviet submarines, the US Navy has decided to embark

on the construction of a new design of attack submarine known as Conform. Meanwhile, work was proceeding on three high speed attack submarines SSN-688-90. (h) Steeply rising costs have obliged the US Navy to revise its programme of new construction of frigates and destroyers. Nuclear powered escorts are to be provided for two of the hour Nuclear powered carriers, thus reducing the requirements from sixteen to nine of such ships. So far besides the cruiser (N) Long Beach, two frigates (N) have been completed. Four more California, South Carolina and two unnamed still have been under construction for completion in 1972, 1973, 1975 and 1976 respectively.

PRESENT ORGANISATION:—The **Secretary of the Navy** is the head of the Department of Navy. Under the direction, authority and control of the Secretary of Defence, he is responsible for the policies and control of the Department, including its organisation, administration, operation and efficiency. The **Chief of Naval Operations** is the Senior Military Officer of the Department of Navy and takes precedence above all other officers of the Naval Services, except an officer of the Naval Service who is serving as the Chairman of the Joint Chiefs of Staff. He is the principal Naval Adviser to the President and Secretary of the Navy on the conduct of war and the principal Naval Adviser and Naval Executive to the Secretary on the conduct of the activities of the Department of Navy. He is the Navy member of the Joint Chief of Staff. Under the Secretary of the Navy he Commands, the operating forces of the Navy. The chief of the Naval operations has the following under his command. (a) The Chief of Naval material, (b) Commander-in-Chief of the US Atlantic Fleet, (c) The Commander-in-Chief of the US Pacific Fleet, (d) The Commander-in-Chief of the US Naval Forces Europe, (e) The Commander, Naval Intelligence Command, (f) The Commander, Naval Communications Command, (g) The Commander, Naval Weather Service Command, (h) The Chief of Naval Air Training Command and (i) The Commander of Naval Reserve Training Command. The **Commandant of the Marine Corps** under the Secretary of the Navy Commands the US Marine Corps. He is directly responsible to the Secretary of the Navy for its administration, discipline, internal organisations, training requirements, efficiency, readiness, operations of its material supports system and for the total performance of the Marine Corp. When performing this function, he is not responsible to the Chief of the Naval Operations for the organisation, training and readiness of those elements of the operating forces of the Marine Corps there is always a close co-operative relationship between them.

WARSHIP STRENGTH:—As per the latest information available, the total personnel strength of the US Navy is 8,00,000 and the warship strength as fol-

With Best Compliments Form :

ENGINEERING DEVELOPMENT CORPORATION

128, NARAYAN DHURU STREET, BOMBAY-3 BR. PHONE : 329604

Manufacturers of : INDUSTRIAL COMPONENTS. SHEET METAL PRESSING
TURNING JOB WORKS. GREASE NIPPLES & STUDS.
BRASS COMPONENTS AS PER CUSTOMER'S DRAWINGS.

Dealers of : M. S. & EN. SER. BAR-STAINLESS STEEL BAR TUBE & SHEET
OHNS & ALLOY STEEL ERW & SEAMLESS PIPES.

lowing. Submarines, attack: fifty-three nuclear powered (forty with Subroc), and forty-six diesel powered. Aircraft Carriers: (1) Attack: fifteen. One nuclear powered (USS Enterprise, 76,000 tons), eight Forrestal and Kitty Hawk-class (60,000 tons), three Midway-class (52,000 tons), and three Hancock-class (33,000 tons), each normally carries an air wing of seventy to eighty-five aircraft organised into two fighter squadrons with F-4s (F-8s in the Hancock-class); two light attack squadrons; one AWX squadron with A-6s; and AEW, tanker, and reconnaissance aircraft. Light attack aircraft include A-4s and A-7s (the A-7s eventually due to replace the A-4s). RA-5Cs are used for reconnaissance (RF-8Gs in the Hancock-class. E-2As and E-1Bs are used for AEW, and a few KA-3Bs as tankers. (2) Antisubmarine: three Essex-class, each with fifty-two aircraft and helicopters including A-4Cs for air defence, S-2Es for long-range search, and SH-3 helicopters.

Other surface ships:—One nuclear-powered guided-missile cruiser; three guided-missile cruisers; four guided-missile light cruisers; one gun cruiser; two nuclear-powered guided-missile frigates; twenty-eight guided-missile frigates; twenty-nine guided missile destroyers; ninety-two gun/ASW destroyers; six guided missile destroyer escorts; fifty-one destroyer escorts; four radar-picket escorts (guided missiles in service are Tartar, Talos, and Terrier SAMs, and Asroc and Subroc ASWs); eighty-one amphibious warfare ships, including seven helicopter landing platforms (LPH); fifty-two landing craft; forty-two ocean minesweepers; 178 logistics, operational support, and small patrol ships. Shore-based aircraft—Twenty-four maritime patrol squadrons with 216 P-3s. Transports include C-47s, C-54s, C-118s, C-119s, C-130s and C-131s.

MANKS



- * **THE INNOVATORS, ENGINEERING INDIA'S SELF-RELIANCE IN THE INDUSTRIAL TAKE OFF ARE**
- * **PROUD TO ASSOCIATE THEMSELVES WITH THE GALLANT ARMED FORCES ON THEIR REMARKABLE VICTORY DURING THE LAST DECEMBER WAR**
- * **CONTINUE TO SERVE THE DEFENCE FORCES BY MANUFACTURING THEIR REQUIREMENTS LIKE INDUSTRIAL CHEMICAL PLANTS, INDUSTRIAL DRYING PLANTS, INDUSTRIAL DEHUMIDIFICATION AND REFRIGERATION PLANTS AND IMPORT SUBSTITUTION**

DEKI AND MANK

Offices At :

39, TARDEO AIR CONDITIONED MARKET,
(5th Floor), TARDEO, BOMBAY-34.
Phone : 3 7 4 2 6 7

Works :

B/58, Giriraj Industrial Estate, Mahakali Caves Road,
ANDHERI (EAST), BOMBAY-69.

WE OFFER COMPLETE PLANTS FOR MAKING

many plants are exported and are running to customer's satisfaction.



BUCKETS

of 7 to 15 numbers.
20/25 doz. in 8 hrs. shift
with hand/power machinery
Investment : Rs. 21000/40000.



IRREGULAR CANS

Hand/power/automatic plant
to make 5/20 litre tins
600/2000 in 8 hrs. shift
Investment : Rs. 20000/154000.



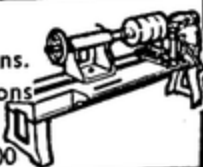
ROUND TINS

Hand/power/automatic plant
600/2500 tins in 8 hrs. shift
Investment : Rs. 5000/35000.



DRUMS

Hand/power plant for 5 gallons.
Automatic plant upto 45 gallons
200/500 drums in 8 hrs. shift
Investment : Rs. 19000/1,54000



UTENSILS

Deep drawing press,
power press, spinning lathe,
circle cutters, swager etc.



ALSO
TRUNKS
Ghamelas
etc.

MANEKLAL & SONS

115, Narayan Dhuru Street.
BOMBAY-3, BR.

BRITISH NAVY

WRITING on "Great Britain's Navy," Commander Joseph Plamer (RIN Retired) has said; "Britain may have lost her empire but she is still a world-wide trader and dependent on this trade for her very life. If NATO is to be outward looking, as it should be, then Britain's skill, tradition, experience and geographical position, all continue to suggest that this world-wide role is not only her most effective contribution to the alliance, but also in the national sense, this in her own best national interests. It is, therefore, heartening to find that this view is reflected in the Government statement on Defence Estimates 1971 which has stated that it recognises that British interests and responsibilities are not confined to the NATO Area and that British political and trading interests are world-wide. This reveals the move from the previous British policy of "all eyes on Europe" with, perhaps, a glance at the surroundings waters. Britain has given practical point to the decision to break out of the mental strait-jacket of the NATO Area. However, the vastness of the new area, the smallness of the force available and fluidity of the situation, East of Suez, combine to demand the maximum mobility, flexibility and self-sufficiency which only a maritime power can give. British sea borne force, therefore, must be able to go anywhere staying outside the territorial waters, maintain itself in fuel, ammunition, stores and minor repairs. It must be able to protect itself and its friends and, if necessary, to strike back. British Navy has a new task and really tough too.

CURRENT DEVELOPMENTS:—The main developments in the British Naval Force structure currently have been: (a) It has been decided to retain the recently modernised fleet carrier **HMS Royal Ark** in commission until late 1970s and the decision has been widely acclaimed. (b) The Light Fleet Carrier **HMS Hermes** has been as a commando ship. However, whether it has been as a replacement or in addition to the existing ships has not been announced. (c) The assault ships **HMS Interped** has been equipped with a satellite communications terminal designated **Skynet type 5** which provides communication via satellite with ships and shore stations covering about one third of the earth's surface, ranging from Britain to Australia and covering the Indian Ocean, above which the satellite is in geo-stationary orbit at a height of 22,000 miles. **HMS Fearless** is to be similarly equipped. (d) There has so far been no firm design for the new through-deck cruisers. According to the statement on Defence, 1971, work on this project was still continuing and was evidently closely connected with the study of the cost effectiveness of operating V/STOL aircraft from them. (e) Britain's third fleet submarine **HMS Churchill** was commissioned for service on 15 July, 1970. The fourth and the fifth, **HMS Conquerer** and **Courageous** have also been completed. Orders have been placed for a ninth vessel of the Valiant class. (f) The eighth and the last of the Royal Navy's Country class destroyers, **HMS Antrim** was commissioned on December, 11, 1970, eighteen months behind schedule. (g) Faced with a serious shortage of airborne early warning aircraft, consequent on the cutting down of the Royal Navy's Fleet Air Arm, it has been decided, as a temporary measure, to transfer ATS-27 radar now fitted in obsolescent Gannet aircraft to Shaeckleton Mark 2 aircraft as and when these aircraft are replaced by Nimrod in aircraft in the Royal Air Force's maritime group. In the long term the RAF has had under planning the development of a new AEW aircraft, (h) As on March 31, 1971 the total ships under construction included, Fleet submarines-5, GM Destroyers-2, Leander Class frigates-3, Amazon class frigates-4 and Minichunters-1.

PRESENT STRENGTH AND DEPLOYMENT: The latest known naval strength of Royal British Navy is 84,600 personnel including Fleet Air Arm and marines. The warship strength is as following. Submarines, attack: two nuclear powered (SSN) (two more are due to enter service in 1971-72) seventeen diesel powered. Surface ships: two aircraft carriers; two commando carriers, two assault ships; one guided missile (GM) cruiser with Seacat SAMs; one GM destroyer with Seadart SAMs; six GM destroyers with Seaslug and Seacat SAMs; two other destroyers; twenty-nine general purpose (G) frigates; nineteen ASW frigates; four AA and three aircraft direction frigates; forty-seven mine counter-measures ships. Ships in reserve or undergoing refit or conversion include (in addition to the above); two SSNs, nine diesel submarines, one commando carrier, two GM cruisers, one GM destroyer, one other destroyer, six GP frigates, three ASW frigates, one aircraft direction frigate. The Fleet Air Arm: Ninety-six combat aircraft. Two strike squadrons with Buccaneers; two air defence squadrons with F-4Ks; four air defence squadrons with Sea Vixens (a combat squadron has twelve aircraft); eight squadrons with Wessex helicopters; three Sea King helicopter squadrons; three Wasp and Whirlwind helicopter squadrons. The Royal Marines total about 8,000 men and include four 800-man commandos. Reserves (naval and marines); 24,200 regular and 7,800 volunteers.

As on December 31, 1971, the majority of the British ships in the Western Fleet were operating in the Atlantic and in European waters. All major ships, wherever they were deployed, were earmarked for assignment to NATO and a frigate was permanently assigned to the Standing Naval Force, Atlantic. As on the same date, other permanent deployment included: (a) **East of Suez and SEATO:**—Six frigates or destroyers, a submarine, some mine countermeasure vessels and Royal Fleet Auxiliaries. (b) **Mediterranean:**—A guided missile destroyer and two frigates earmarked to SACEUR, reinforced from time to time by an aircraft carrier, a commando ship with a Royal Marn Commando embarked frigates and submarines earmarked for other NATO commanders and by Royal Fleet Auxiliaries. (c) **The Caribbean and South Atlantic:**—Two helicopter-carrying frigates, one with a detachment of Royal Marines, in the Caribbean, HMS Endurance AAICE patrol ship, with a detachment of Royal Marines and a hovercraft unit maintained in the Falkland Islands.

WITH BEST COMPLIMENTS FROM :

Phones :

Office : 319794
319570

Residence :
571761

Grams:
'Beegelock'

BAKSHI GHURA & CO.

285, Thakurdwar Road,
(Near Charni Road Station), Bombay-2.

**THE HOUSE OF FURNITURE AND
ERW TUBES**

FRANCE

AS at present French Navy ranks as the fourth most powerful in the world. French Naval forces are no longer completely integrated with NATO. Ultimate French policy is to establish and maintain global presence in its own right. Most important of the current developments in the French Naval Force structure have been:

(a) A second exhibition of French naval equipment was held at Le Bourget in September, 1970, at which a great deal of new material of advanced design was on show; together with much equipment designed for undersea exploration. As regards ships, once again the emphasis was on the small to medium sizes, fast missile armed warships in the design of which French naval architects appeared to have established a lead. (b) After much discussion, the French Government finally authorised the modernisation of the **A/A cruiser Colbert**, but on less ambitious scale than originally proposed. (c) The trials of the first French ballistic armed missile submarine **Redoubtable** which began in June, 1969, have been reported to be very successful. The reactor has been claimed to have remained critical for 5,000 hours during which 10,000 miles were covered at 1,000 hours were spent submerged. More than twenty firings of dummy missiles were carried out, some in salvos of four. **Redoubtable** returned to her base at Ile Longue, from where the final trials were carried out. The third ship of the class **Le Foudroyant** was due to start trials in 1972. The fourth ship in the class has been named "**L'Indomptable**". (d) The aircraft direction ship **La Bourdonnais**, after an extensive refit at Toulon, during which she received new sonar equipment and the tactical data system (SENIT) rejoined the Mediterranean Fleet at the beginning of 1971. (e) It was announced on September, 15, 1970 that the marine prototype of the Anglo-French Jaguar Single-seater, close support aircraft had completed a very satisfactory series of test flights from the French carrier **Clemenceau** off Lorient. The French Navy is expected to order 40 of this aircraft, the carrier borne version of which is designated **MOS**.

Current Strength:—As on December, 31, 1971, the total strength of the French Navy was 68,500, including Naval Air Force. The combat warship strength consisted of Nineteen attack submarines; two aircraft carriers; one helicopter aircraft carrier; one helicopter carrier; two assault landing ships; one antiaircraft command cruiser; sixteen destroyers (four guided missiles with Tartar SAMs); three GM frigates with Malafon ASW Missiles (two with Mascalucia SAMs); twenty-seven frigates; fourteen coastal escorts; fourteen fleet minesweepers; sixty coastal minesweepers; fifteen inshore minesweepers; five landing ships; twelve landing craft. Naval Air Force: 12,000; organised into 200 combat aircraft. Three fighter-bomber squadrons with Etendard IV-Ms; two interceptor squadrons with F-8Fs; three reconnaissance squadrons with Etendard IV-Ps; three ASW squadrons with Alizes (all the above can be flown from aircraft carriers); five maritime recon squadrons with Atlantics and P-2s; one ASW helicopter squadron with Super-Frelons; two helicopter squadrons with Alouette II/IIIs.

OTHER COUNTRIES

BELGIUM: As on December, 31, 1971, Belgium Navy had a total of 5,000 men on strength. The combat warship strength consisted of five fleet minesweepers|minehunters; two fleet minesweepers; ten coastal minesweepers|minehunters; ten inshore minesweepers; two support ships; two S-58 and three Alouette III helicopters. Reserves: 3,000 trained. **CANADA:** The latest known strength of the Canadian Navy stood at 15,000. The combat warship strength of the Royal Canadian Navy was four submarines; nine helicopter destroyer escorts; eleven ASW destroyer escorts; six coastal minesweepers; one ASW hydrofoil; three support ships. The maritime Air Element consists of: four maritime patrol squadrons with Argus, maritime patrol squadron with Tracker aircraft; one ASW squadron with Sea King helicopters. Reserves: about 2,900. **DENMARK:** As on 31st December, 1971, the total strength of Royal Danish Navy stood at 6,500 men and combat strength of warships stood at: six submarines; two fast frigates; four helicopter frigates (fishery protection); four coastal escorts; sixteen fast torpedo boats; sixteen patrol boats (seven less than 100 tons); four fleet minelayers; three coastal minelayers; eight coastal minesweepers; four inshore minesweepers; nine seaward defense craft eight Alouette III helicopters. Reserve: 3,000 Volunteer Home Guard of 4,000 with small patrol boats; **West Germany:** As on December, 31, 1971, the total strength of the West German Navy was 36,000, including Naval Air Arm. The combat warship strength was: eleven coastal submarines; three guided missile destroyers with Tartar SAMs; nine destroyers; six fast frigates; two frigates; five fleet utility vessels; thirteen escort and support ships; twenty-four coastal minesweepers|minehunters; thirty fast minesweepers; eighteen inshore minesweepers; two minelayers; forty fast patrol boats; two landing ships; twenty-two landing craft; Naval Air Arm: 6,000; 100 combat aircraft; Four fighter-bomber recce squadrons with F-104Gs; two maritime reconnaissance squadrons with BR-1150 Atlantics; twenty-three S-58 SAR helicopters, being replaced by SH-3Ds. Reserves: 36,000 on immediate recall. **GREECE:**—As on December 31, 1971 the total strength of the Greek Navy stood at 18,000 men. The combat warship strength was: two submarines (four more to be delivered by West Germany); eight destroyers; four destroyer escorts; seven coastal patrol vessels; two minelayers; twenty coastal minesweepers; twelve fast torpedo boats (less than 100 tons; four fast patrol boats, with Exocet SSMs, are on order from France, the first due for delivery in 1971); eight tank landing ships; six medium landing ships; one dock landing ship; eight landing craft; eight HU-16 maritime patrol aircraft **ITALY:**—As on December, 31, 1971 the total strength of the Italian Navy stood at 45,000 (including air arms and marines). The combat strength of the warships stood at: Nine submarines; three guided missile (GM) cruisers with Tarrar SAM and ASW helicopters (one with ASROC ASW missiles); two GM destroyers with Tartar SAMs; two destroyer leaders; seven ASW destroyers; ten destroyer escorts; sixteen coastal escorts; four ocean minesweepers; thirty-seven coastal minesweepers; twenty inshore minesweepers; seven fast patrol boats; seven motor torpedo boats (less than 100 tons); one command ship; three landing ships; two marine infantry battalions. Naval Air Arm: Three maritime patrol squadrons with S-2 (due to be replaced by Atlantics by mid-1972), HU-16A SAR aircraft, and 50 Bell-47, SH-34, AB-202 and SH-3D SAR helicopters. **NETHERLANDS:**—As on December, 31, 1971 the total strength of the Netherland Navy stood at 19,000, including 2,900 marines and 2,000 naval air force. The combat strength

of the warship stood at: five submarines (two more due to become operational in 1971/72); two cruisers (one guided missile with Terrier SAMs); six GM frigates with Seacat SAMs; twelve destroyers; six corvettes; six support escorts; five patrol vessels; thirty-six coastal minesweepers and mineshunters; sixteen in-shore minesweepers; one fast combat support ship. Naval Air Arm: five Atlantic and about thirty P-2 and S-2 maritime reconnaissance aircraft; fifteen Wasp, SH-34J and AB-204B ASW helicopters. **Norway:**—As on December, 31 1971, the total strength of the Norwegian Navy stood at 8,500, including 800 coastal artillery. The combat warship strength stood at: fifteen coastal submarines; five frigates; two coastal escorts; ten coastal minesweepers; five minelayers; twenty-one gunboats (refitting with Penguin SSMs); six torpedo boats; twenty torpedo boats (less than 100 tons); two armed depot and training ships; a number of coastal artillery batteries. Reserves: 12,000. **Portugal:**—As on December, 31 1971 the total strength of the Portuguese Navy stood at 18,000 men, including 3,300 marines. The combat warship strength was: four submarines; eleven frigates; six corvettes; fourteen coastal patrol vessels; four ocean minesweepers; twelve coastal minesweepers; forty-one patrol launchers (less than 100 tons); five landing craft (LCT-type); fifty-eight small landing craft (less than 100 tons). **Turkey:**—As on December, 31, 1971 the total strength of the Turkish Navy stood at 38,500 men and the combat warship strength was: twelve submarines; ten destroyers; six coastal escorts; eleven motor torpedo boats (two less than 100 tons); ten motor launches; fifteen coastal minesweepers; five coastal minelayers; four inshore minesweepers; one fleet minelayer; a number of landing craft.

With Compliments From :

Sanghavi Scientific Corporation
82-86 Abdul Rehman Street,
Bombay-3.

**IMPORTERS & STOCKISTS OF
SCIENTIFIC LABORATORY &
HOSPITAL INSTRUMENTS.**

**Molex Electronics &
Medical Equipment**

E-21 Sarvodaya Nagar,
Panjarapole Road,
Bombay-4.

**INDENTORS AND
MANUFACTURERS OF
LABORATORY, SCIENTIFIC AND
RESEARCH INSTRUMENTS.**

Telephone: . . Office : 329073 - Residence : 332393

Grams : SICENTIFIC

WITH OUR WARMEST GREETINGS TO

**ALL OFFICERS AND MEN OF
OUR GALLANT ARMED FORCES
GUARDIANS OF OUR
NATIONAL FREEDOM AND
NATIONAL WAY OF LIFE
VICTORS IN THE GREATEST EVER BATTLE
FOR PEOPLES' FREEDOM WAGED IN
● BANGLA DESH—**

P & B LABORATORIES PVT. LTD.

(Prop. of:—PHARM - CHEM MANUFACTURING CORPORATION)

Manufacturers of :

ANEUDOX 12

An ideal combination of important neurotropic vitamins in 3 ml. ampules (IV & IM) and also in 10 ml. vials.

FERROCIN B-12

A well tolerated haematinic liquid with the added advantage of iron Choline Citrate.

LAS

Four-scored embossed taps. (Sulphamethoxy pyridazine)

A safest longest acting Sulphonamide.

MALTVIRON

A highly palatable dietary malt supplement.

NIDAGYL 200

Sugar coated tablets

A complete drug in the treatment of Amoebiasis, Trichomoniasis, Gingivitis, Giardiasis, etc.

**NIDAGYL CAGINAL
INSERTS**

First time introducing in INDIA
For complete and effective treatment of TRICHOMONIASIS.

PHARMA COMPOUND

A complete general restorative TONIC.

Sole Distributors :

Phone :
694710
692567

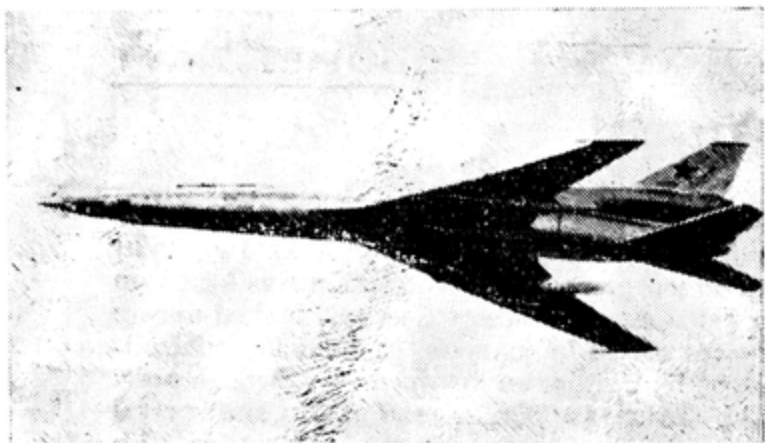
**PHARM - CHEM DISTRIBUTORS
11, CHAKRAVARTI ASOK ROAD,
KANDIVALI (EAST), BOMBAY-67.**

SOVIET NAVY

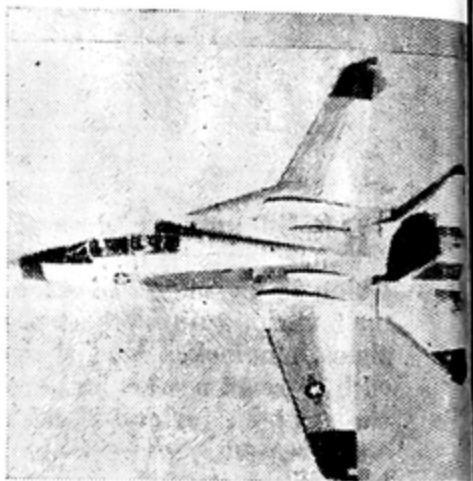
RIGHT upto the close of World War II, it was the general faith and belief of naval experts throughout the world that geography had not been kind to Soviet Union in the matter of the build up of sea power. Their contention was based on the fact that, out of the four major expanses of her coast line, two looked out on almost landlocked seas, their enterances closed by narrows, traditionally controlled by foreign powers and the other two looked out on the open seas through ports closed by ice for considerable portion of the year. On account of this and several other reasons, Soviet Union was considered a predominantly land power with her military strength mainly vested in her large armies. These naval experts could not even visualise that in another two decades or so, Soviet Union will transform herself from a maritime non-entity into a maritime power of more effective global presence than any other power in the world. The seemingly impossible has happened and, as at present, the Soviet Union has the largest submarine force in the world, her surface vessels including the auxiliaries are of the latest and most sophisticated type and her merchant fleet is also the largest in the world. Despite all the lags and discrepancies of geography, Soviet Union has most effectively projected her naval presence to all the seas and oceans of the world.

THE BUILD UP PROCESS:—According to the Soviets, their country embarked upon most resolute and determined war on the so called lags and discrepancies of geography and lack of maritime character and outlook of the Soviet people. In consequence to large layouts of funds and allocations of priorities, equivalent to, or even surpassing those of space programme, they were able to claim in 1952 that tonnage of ships built in that year alone was 3.5 times greater than the tonnage of ships built in 1940. New cruisers, destroyers, torpedo boats and other fighting ships had been provided with more powerful artillery, anti-aircraft means, mines and torpedos and better navigation means for higher manoeuvrability than anything known in the past. Similarly the naval air arm had been provided with new aircraft, and the coast guard and anti-aircraft artillery, new artillery systems. Special attention had been given to the construction of new types of submarines possessing considerable submerged and surface speeds, capable of submerging faster, remaining underwater for longer and operating at greater distances from their bases. The construction of atomic submarines had been commenced.

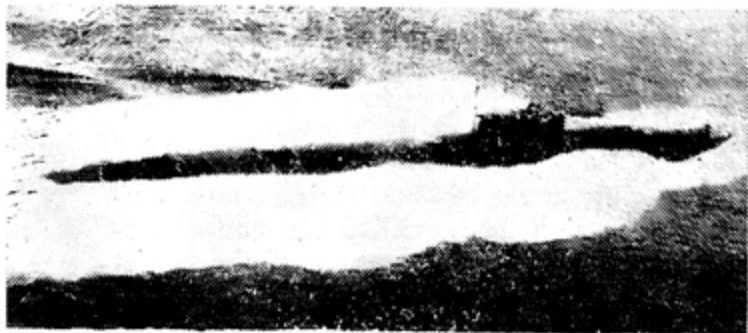
Again in the beginning of 1960s, the Soviets were able to claim that, in the new conditions, the main strike force of the Soviet Navy was its powerful submarine fleet, which included nuclear powered missile carrying vessels. They were armed with long range ballistic missiles that could be launched underwater, homing torpedoes and other modern weapons systems. Nuclear submarines combined high surface and underwater speed with virtually unlimited range. This was demonstrated in the world's first round-the-world cruise of a group of Soviet nuclear submarines. In spite of the difficulties of the cruise, which took the Soviet submarines round South America, through the icebergs and ice flows of Drake Passage and Antarctic waters, they travelled nearly 40,000 kilometers without surfacing. The nuclear submarine **Leninsky Komsomol** emerged famous for its cruises



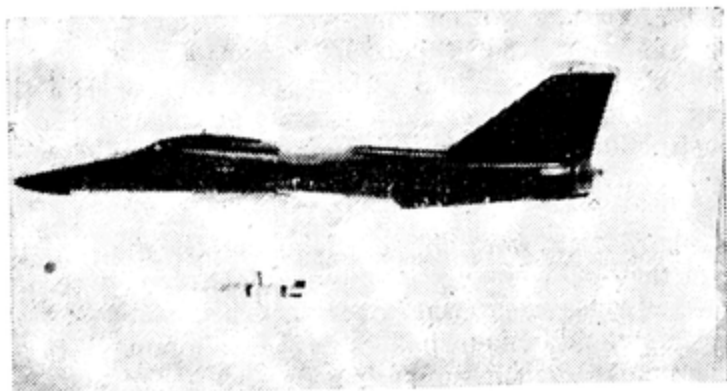
The Soviet supersonic TU-22 Blinder bomber, a medium-range aircraft, is capable of reaching targets in North America with refueling. The Soviets have about 200 TU-22s.



The US Navy's controversial F-14 fighter, now in its second stage, is shown here with its swingwing fully extended. It is designed as a carrier-based air-superiority fighter.



One of the USSR's 5,000-ton Echo II-class nuclear-powered submarines on exercises in the North Pacific. The submarine carries eight cruise missiles and a crew of 100.



The USAF Strategic Air Command has recently added FB-111s to its operational inventory. Here an FB-111 fires a SRAM missile in a test run at the White Sands Missile Range.



The MIG-23 Foxbat, a Mach 3.2 all-weather fighter, is one of the world's most advanced aircraft. There is also a tactical fighter version.

to the North Pole under the Arctic ice cap. Besides, by this time, nuclear missile-carrying submarines possessed such important combat characteristics as secrecy of movement, high manoeuvrability and tremendous striking power. Solid-fuel naval missiles launched from submerged positions were capable of striking sea and ground targets hundreds and thousands of kilometers away with great accuracy. Nuclear submarines were equipped with the latest navigation systems and electronic devices that could 'see' the situations above and below the surface and make the best use of all weapons systems. The submarines communications systems enabled them to keep in touch with the command from any point of the globe. This tremendous striking power of the Soviet submarine fleet was complemented by the power of the naval air forces, equipped with jet aircraft and armed with missiles of all classes and designations. In the matter of surface ships, the Soviet Navy had received new surface missiles carrying ships built with due account of the reequipment of modern nuclear missile warfare. The outstanding examples of this type of warships were missile cruiser *Varyag* the missile carrier *Gremyashchi*. Anti-submarine defences had also been successfully developed. The marines had received a vast variety of new combat equipment and Naval coastal units had been armed with long-range missiles.

ADMIRAL GROSHKOV AND MARSHAL ZAKHAROV'S CLAIMS:—

Towards the close of 1960s Admiral Groskhov who had been commanding the Soviet Navy from 1956, proudly claimed that the flag of the Soviet Navy proudly flew over the oceans of the world. Sooner or later, the US will have to understand that it no longer had the mastery of the seas. In the same tone and tune Marshal Zakharov claimed that the time when Russia could be kept out of the world's oceans had gone for ever. The "imperialists" could no longer have them to themselves. We shall sail all the world's seas, no force on earth could prevent us. And these were no empty boats. The US which had never been friendly, kind or granting to the Soviets, had to admit the bitter truth. Writing in the **Changing strategic Naval Balance... USA and USSR**, prepared at the request of the **US Armed Services House of Representatives**, the Authority conceded that for the first time in its history, the Soviet Union was developing offensive maritime strategy and was seeking supremacy at the high seas of the world. The naval forces being created by the Soviet Union and the uses of sea power now being made by her, were a part of the overall Communist design of total victory in the struggle against the United States and other free world nations... Behind the new Soviet sea power was an awareness that, Communist domination of the globe could be achieved only through absolute supremacy at all major points in the spectrum of conflict. Soviets had acquired oceanic vision. They had come to know that sea was the major artery, giving life to the free world. The latest Soviet claim was contained in article published in *Pravda* in July, 1971. Through the article, the Commander-in-Chief of the Soviet Navy warned the 'Imperialists' that Soviet fleets could attack any point on the globe. Never before the Soviet Navy had been so powerful and efficient. The US had claimed to have developed submarine missiles system with which it vainly hoped to divert from US territory a considerable number of possible retaliatory nuclear strikes. However, no strategy, including the so called oceanic strategy, would save any aggressor, who risks waging war on USSR and other countries of the Socialist community, from a crushing retribution.

SOVIET NAVAL OBJECTIVES:—Outlining the Soviet Naval objectives, Marshal Rodion Malivosky, the Soviet Minister of Defence, shortly before his death in early 1967 declared that in the absence of a general war situation, Soviet naval forces had politico-military missions to perform, plus support of the 'wars of liberation' and various other interventionist operations. In a general war, the Soviet warships would undoubtedly strike at the enemy sea based power, at merchant shipping and at the bases, ports and coastal industrial centres in many parts of the world. The USSR's attack submarine forces, more than twice the size of US undersea counter force... will obviously cut the free world's lines of communications and hinder the movement of oil and materials, essential to the industrial machine of the West. The nuclear armed submarines will have the mission of launching missile attacks at naval bases, missiles launching facilities, strategic centres and airfields within firing range of the oceans. If the Soviets determined on a surprise attack, they will employ their naval forces well before the day, not only for direct attacks on land targets, but also at the critical points in the shipping lanes. In addition, the Soviet Naval forces would be engaged in supporting Soviet ground troops in a sweep across Europe into the Middle East.

ELEMENTS OF SOVIET NAVAL POWER:—Soviet navy today possesses all the elements of a global sea power of matchless excellence. However, of all the elements, the most effective is the submarine force. According to US experts the numbers are certainly a part of the total threat picture. However, they do not tell the entire story, nor they can be considered a sole threat by themselves. What constitutes the real threat are the characteristics and capabilities of the submarines in the Soviet inventory. At the end of 1970, the Soviet Navy was claimed to have ten 'Y' class submarines each carrying 16 Ballistic missiles with a range of about 1300 miles. As at the same time the rate of production was estimated at eight to ten a year. A longer range missile for arming these submarines was claimed to be undergoing tests. Further, Soviet naval threat is no longer submarine in character exclusively. The USSR has also been striving for excellence in all other types of service and support ships.

According to US experts, although, Soviet submarine force constitutes the dominant threat, Soviet progress in other aspects of naval warfare has been impressive indeed. The extensive and varied capabilities incorporated in the new types of ships, their imaginative liberation from the stereotype of the past vindicate a high order of professional and creative activity, which are more portentous than the still modest numbers of these advance types in their inventory. Examination of recent Soviet publications clearly indicate that the operational task groups of Soviet Navy consist of **Kresta class** of cruisers which have undergone several improvements on the original design and capabilities and **Kynda class** of destroyers equipped with surface to surface and surface to air missiles. Other types of missile ships include the short range guided missile patrol boats of **Osa and Konar classes**. These powerful and interesting new naval craft, represent a remarkably economical maritime striking weapons. They have been claimed to be the true pocket battleships of the missiles era.

The Soviet Navy is by no means an unconventional Navy, exclusively equipped with exotic types of vessels. It also has escorts, coastal mine sweepers and an efficient fleet of specialised ships, including nuclear submarine support ships,

fleet service and supply vessels and ocean going tugs. In addition, the Soviet fleet has many oceanographic vessels, minecraft, ice breakers and electronic intelligence gathering ships. The Soviet Navy's ability to carry out amphibious operations has already been very much strengthened by the construction of three helicopters assault carriers. There are reports that more of such carriers are under construction. In addition to the missiles equipped destroyers, the Soviet Navy also has a strong force of conventionally armed destroyers having good sea keeping qualities and extensive anti-submarine and anti-aircraft armament. While the Soviet Navy still lacks carrier borne naval air arm, it has a long range land based multi-purpose aircraft, including reconnaissance aircraft which act as the eyes of the fleet, plus a global force of fishing craft which also serve the purpose of reconnaissance and intelligence gathering. In the Soviet Navy, even the auxiliary vessels have intelligence gathering minelaying and mine clearing capabilities.

PRESENT STRENGTH AND DEPLOYMENT:—As at present, the Soviet Navy is organised into the **Northern Fleet, the Baltic Fleet, the Black Sea Fleet and the Pacific Fleet.** Formally, it was not strictly correct to speak of one Soviet Navy in Europe. In point of fact, there were three Navies... the Northern, the Baltic and the Black Sea Fleets... all separate and all victims of Geography. This was highly unfavourable to sea power. The Northern Fleet, the only one on open waters, was remote from major industrial complexes. The two other European Fleets, which were near the industry, were choked off from the high seas by straits subject to Western strategic control. To overcome these geographic inhibitions, the Soviets have since adopted the principle of strategic mobility. Using technology and techniques, the Soviet Navy now keeps ships at great distance away from ports and for long periods of time and move them freely between the three fleets areas. Not only has this resulted in much greater operational activity, but it has also enabled the three widely separated fleets areas to share common objectives and it has become realistic to make reference to a Soviet European Navy. While each of the three fleets still retains its former tasks, a new mission, strategic and unifying, has been added to extend the Soviet influence more widely by means of sea power.

As on December, 31, 1971, the personnel strength of the Soviet Navy and Naval Air Force was 475,000 (including Naval Air Force 75,000). The combat warship strength were: **Submarines** (including ballistic-missile vessels) as Attack Twenty-five nuclear powered; 210 diesel powered. Cruise-missile: Thirty-five nuclear powered and twenty-five diesel powered (with four to eight 300-mile-range missiles) **Surface ships.** Two ASW helicopter cruisers with SAM, and up to twenty KA-25 helicopters; two Kresta II-class cruisers with (horizon range) surface-to-surface cruise missiles (SSCMS) and SAMs four Kresta I class cruisers with SSCMs and SAMs; four Kaynd-class cruisers with SSCMs and SAMs; eight Sverdlov-class and two older cruisers (one with SAMs); one Krivak class destroyer with SSCMs and SAMs; six Kanin-class destroyers with SAMs; three Krupny-class destroyers with SSCMs; four Kildin-class destroyers with SSCMs; seventeen Kashin-class destroyers with SAMs; nine modified Kotlin-class destroyers with SAMs; twenty-three Kotlin-class destroyers; forty Skory and modified Skory-class destroyers; 105 other ocean-going escorts; 250 coastal escorts and submarine chasers; 110 Osa and thirty Komar-class patrol boats with SSCMs; 250 fast patrol boats; 180 fleet minesweepers; 125 coastal minesweepers; 105 landing ships and numerous landing craft; some trawlers are used for

electronic intelligence. All submarines and the larger surface vessels not fitted with SSMs are equipped for minelaying. A proportion of the destroyers and smaller vessels may not be fully manned. **Shore-based aircraft:** Bombers: 500, mostly based near the north-west and Black Sea coasts of the USSR. 300 TU-16s with Kipper or Kelt ASMs; 100 TU-16 reconnaissance and tanker aircraft (replacement of the reconnaissance version with the TU-22 Blinder has begun); fifty IL-28 torpedo-equipped light bombers; fifty TU-20 long-range naval reconnaissance. Other aircraft and helicopters—500, seventy-five BE-12 ASW amphibians; twenty-five IL-18 May ASW aircraft; 200 MI-4 and KA-25 ASW helicopters; 200 miscellaneous transports. Naval Infantry—about 15,000.

WARSAW PACT COUNTRIES: **Bulgaria:**—As on December 31, 1971, Bulgarian Navy had 9,000 personnel. The combat warship strength were: Two submarines; two escorts; eight coastal escorts; two minesweepers; two minehunters; four inshore minesweepers; twelve motor torpedo boats (eight less than 100 tons); fourteen landing craft; a small Danube flotilla. **German Democratic Republic:** The latest known personnel strength of the GDR's Navy was 16,000. The combat warship strength were four destroyer escorts; twenty-five coastal escorts; 47 minesweepers; twelve Osa-class patrol boats with Styx SSMs; seventy motor torpedo boats (less than 100 tons); eighteen landing craft; sixteen MI-4 helicopters. **Hungary:** The total personnel strength of the Hungarian Navy had 500. The combat warship strength: There is a Danube flotilla of forty minesweepers and twenty patrol craft. **Poland:**—The total personnel strength of the Polish Navy has 20,000 (including 1000 marines). The combat warships strength was: Five submarines; two destroyers, thirty coastal escorts/submarine chasers; twenty-four fleet minesweepers; twenty-seven inshore minesweepers; twelve Osa-class patrol boats with Styx SSMs; twenty torpedo boats (less than 100 tons); twenty-two landing ships; forty-five naval aircraft, mostly MIG-17s, with a few IL-28 light bombers, and some helicopters; samlet cruise missiles for coastal defence. **Romania** Total Naval strength was 9,000. The combat warship strength was: Six coastal escorts; four minesweepers; twenty-two inshore minesweepers; five Osa-class patrol boats with Styx SSMs; twelve motor torpedo boats (less than 100 tons); eight landing craft

OTHER EUROPEAN COUNTRIES

Albania:—As on December, 31, 1971, the total personnel strength of the Albanian Navy was 3,000 and the combat warship strength was four submarines; four ASW patrol vessels; thirty motor torpedo and patrol boats (less than 100 tons); eight inshore minesweepers; some SSMs deployed around the ports of Durazzo and Valona. **Finland:**—The total personnel strength of the Finishian Navy was 2,500 and the combat warship strength were three frigates (one used as training ship) two corvettes; one patrol boat with MK 66 SSM; fifteen fast patrol boats (less than 100 tons); two coastal mine layers; five patrol boats (ex-inshore minesweeper). **Spain:** Total personnel strength: 47,500 including 6,000 marines. The combat warship categorised into three submarines; one helicopter carrier; one cruiser; sixteen ASW destroyer; three destroyers; six corvettes; one ASW patrol vessel; three torpedo boats thirteen fleet minesweepers; eight frigates; six frigate—minelayers; twelve coastal minesweepers; eight landing ships, three ASW

helicopter squadrons; one light helicopter squadron. **Sweden:**—The total personnel strength of the Swedish Navy was 4,700 regulars and 7,400 conscripts. The combat strength of the warship were: Twenty-three submarines; two GM destroyers with Rb-08 SSMs; four GM destroyers with Seacat SAMs; two other destroyers; seven fast antisubmarine frigates; seventeen heavy torpedo boats; twenty-five torpedo boats (less than 100 tons); one minelayer|submarine depot ship; eighteen coastal minesweepers; seventeen inshore minesweepers (eight less than 100 tons); five coastal artillery regiments with 75-mm, 105-mm, 120-mm 152-mm and 210-mm guns; Rb-08 and Rb-52 (SS-11) SSMs; ten Vertol and ten AB-206A helicopters. **Yugoslavia.** The total personnel strength of the Yugoslavian Navy was 18,000 and the combat strength was five submarines; one destroyer; three patrol vessels; sixteen submarine chasers; four coastal minesweepers; twenty inshore minesweepers (twelve less than 100 tons); ten Osa-class patrol boats with Styx SSMs; sixty-seven motor torpedo boats (fifty-five less than 100 tons); thirty-five landing crafts; twenty-five coastal artillery batteries.

Flamex
FIRE EQUIPMENTS

FIRE HYDRANT
HOSE COUPLING
BRANCH
BREECHING
STAND PIPE
HOSE PIPE
HOSE-REEL
C. T. C.
DRY POWDER
CARBON DIOXIDE EXTINGUISHERS
FOAM
SODA-ACID
HAND OPERATED SIREN
ASBESTOS SUIT & BLANKET

NEWAGE INDUSTRIES
SURENDRANAGAR • GUJARAT (INDIA) GRAM "NEWAGE"
PHONE . 403

**WHAT DO
FIAT CARS,
TATA, DODGE, FARGO
AND BEDFORD TRUCKS,
TEMPO, JEEP AND
FORDSON TRACTORS
HAVE IN COMMON?**



The same brand of radiators
as original equipment!
And we make them!!

BHARAT RADIATORS PVT. LTD.

S. G. Barve Marg, Kalina, Santacruz (East), Bombay 29

GRAMS: PRESSWORK TEL: 532965

CHAPTER XI

PUSH-BUTTON WAR

●

— SOURCES, CAUSES AND CONSEQUENCES

●

THE two bombs that destroyed the Japanese cities of Hiroshima and Nagasaki and brought about the immediate end of World War II, marked the dawn of Atomic Age in modern warfare. In their very rudimentary stages though, the two bombs demonstrated all the capabilities of transforming the war into a 'Push Button System' and left it to the level of utter and absolute destroyer of the entire human race.

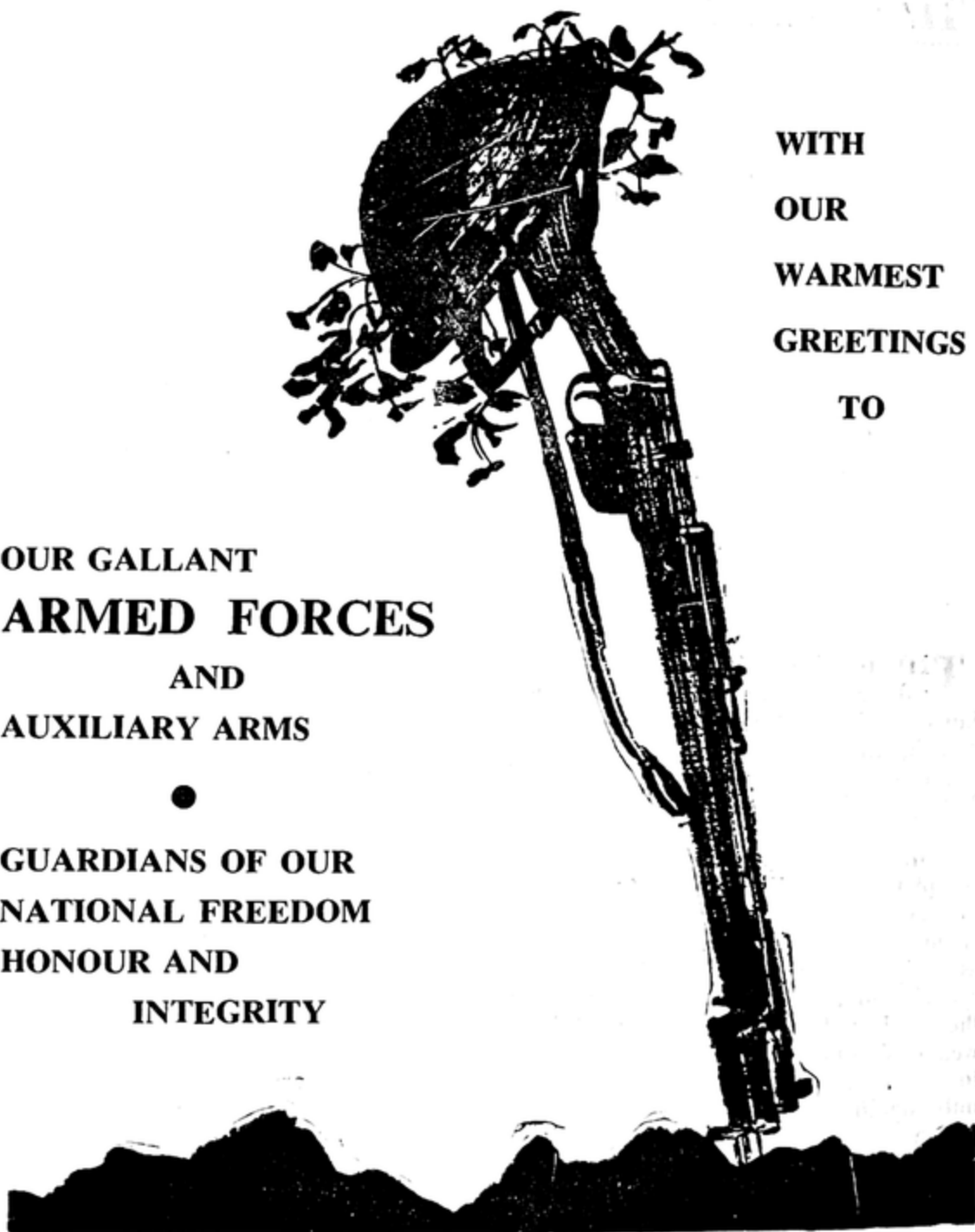
Immediately after the War, the United States of America claimed to have complete monopoly of the atomic bombs and the technical know how for their further development. This was, however, challenged by the Soviet Union which claimed that two of her nationals had succeeded in splitting the Uranium-235 as early as 1939 and that further work on it had been obstructed by the exigencies of the war. It was later revealed that both the powers embarked upon the further development of what later came to be known as 'thermo-nuclear weapons' almost at the same time. It did not take long for the Soviet Union to emerge as the leader, which position she has maintained till to date. The only significant development in the post-war period has been the emergence of China as the very first Asian and third most effective nuclear power in the world.

Throughout the post-war period, humanity has lived under the mortal threat of a nuclear general war. However, nuclear weapons, which have 'since passed through 'true population explosion' have not yet seen any further combat employment. This has been despite the fact that there have been a large number of brushfire type of conflicts in which both the super powers were deeply, though indirectly, interested. This has led many to think and believe that wars in the coming future may be of conventional-cum-guerrilla type and nuclear weapons may never see combat employment. . . . the interest in them may be more of academic than of combat nature. A great relief to the suffering humanity though, the future will still have to be fortified with caution because the stock-piling of nuclear weapons by all the three powers has continued unabated and mutual tensions have not died out.

WITH
OUR
WARMEST
GREETINGS
TO

OUR GALLANT
ARMED FORCES
AND
AUXILIARY ARMS

●
GUARDIANS OF OUR
NATIONAL FREEDOM
HONOUR AND
INTEGRITY



**GENERAL SPARES INDUSTRIES
PRIVATE LIMITED**

HIND RAJASTHAN INDUSTRIAL ESTATE,
NAIGAM CROSS ROAD, BOMBAY-14.

Phone : 443822

FIRST BEGINNINGS:—Scientists and researchers have themselves conceded that from the knowledge of U-235 to the first bombs which devastated the Japanese cities of Hiroshima and Nagasaki, it was a laborious, time consuming and expensive path... During the war, entire effort was concentrated in the United States of America where **Project 'Y'**... as the bomb development project was called... was brought into existence. It required the very utmost in collaboration among the civil engineers, metallurgists, chemists, physicians, as well as military personnel. It was on the historic day of July, 16, 1965, that the first full scale test of the marvel of engineering and technology was made by the imposing type bomb fusion in a remote section of the Alamogordo Air Base, near Mexico. The test was successful beyond the most optimistic expectations of the authors and architects themselves. It was estimated that the energy generated was in excess of the equivalent of 15,000 to 20,000 TNT. This estimate was later considered as 'most conservative' because actual generation was found to be many times this conservative figure. The fact that the atomic bomb was a reality caused unprecedented excitement among those who were let in on the greatest secret of US military history. Immediately, the grim prospect of long and bitter fighting was replaced with a vision, fair and bright, to end the war at once and solve all the prelexing problems posed by the physical invasion and bitter fighting on the Japanese mainland. The vision was not unfounded. With the air delivery systems perfected by the use of aircraft, already in the US inventory, the two bombs dropped on the Japanese cities of Hiroshima and Nagasaki brought about the unconditional surrender of Japan.

POST WAR PERIOD...NEW VISIONS:—The employment of atomic bombs during the war was on an extremely limited scale. Besides, the bombs were used against a power which had no defence against the use of such weapons. Under the circumstances, therefore, even the ablest of military thinkers and planners were unable to study and discuss the atomic future with any definite and positive objectivity. However, the general opinion was that the advent of atomic weapons would certainly bring about the most radical ever changes in the traditional concepts of strategy and tactics. They will influence very greatly the quality and quantity of the armed forces to be maintained and kept in combat readiness for what was called a 'nuclear general war'. The battle environment will also undergo similar change. The reaction was the emergence of the extremists of air power. They clearly contended that the future of warfare would lie in the hands of few men, flying few bombers armed with few atomic bombs. In their opinion, therefore, massive armies and huge navies had no more cause to exist. In similar tone and tune they thought that small powers will have no initiative of their own and would be most critically dependent upon nuclear giants for their very survival.

THE ARMAMENT RACE...BEGINNINGS:—Immediately after the close of the war, the United States of America claimed complete monopoly of the atomic weapons, the technical know how for their further development. In order to hold this monopoly and keep the rest of the world tied down to its apron strings, the United States of America lost no time in embarking upon a massive build up of atomic weapons. The first post-war tests in the United States were called '**operation Crossroads**' which clearly indicated that their minds were not free from doubts about the atomic policy wisest in the coming future. The second series of tests were called '**Operation Sandstone** and they appeared to be based on better and clearer objectivity. The US position during this

period was further strengthened by some new scientific discoveries. As a result of the successful employment of these discoveries, the US atomic bombs by 1953 were twenty-five times as powerful as the weapons with which the atomic age had dawned.

Immediately after the close of the war, Stalin and his General Staff Officers gave no impression to the outside world that they were in any way impressed by Hiroshima and Nagasaki bombing and extensively publicised nature and character of the so called ultimate weapons system. However, they also opened their post-war drive for atomic weapons by the 'proud claim' that two of their nationals had succeeded in splitting the pranium atoms as early as 1939 and that the exigencies of war had made further progress difficult. The truth in the assertion, though unpleasant and unpalatable to the US, could not be denied. In 1946, the Soviets recommended their effort for the development of their own atomic weapons. 1947-48 led to the breaking of Soviet silence surrounding the atomic investigations. On August, 25, 1949, the Tass proudly proclaimed to the world that the Russian atomic bomb, work on which had been begun in 1947, had been exploded and that the bomb was six times more powerful than the Hiroshima bomb. The myth of US being alone in the atomic field was shattered to pieces. Not content with this achievement, the Soviets moved for the development of the hydrogen bomb, almost at the same time as the US had done. Although US was the first to catapult the world into the **Hydrogen Era** but their contrivance was not a military weapon. It was seventeen months after the much publicised '**Mike Shot**' that the Americans were able to produce and successfully test the Hydrogen bomb. However, their enthusiasm for the achievement was much dampened when they came to know that, although they were the first to explode new bombs, it were the Russians who solved the problems of dropping the bomb from an aeroplane. The Soviets were clearly in the lead and they were determined to retain this leadership for all the time to come and thereby deter the '**imperialists**' from unleashing a nuclear general war on the Soviet people and other members of the Socialist Community. The Soviets proved true to their assertion. Immediately after moratorium on nuclear testing was broken in 1961. **Premier Khrushchev** proclaimed to the world that his country had developed a nuclear device equal in capacity to 100 million tons of TNT. On October, 23, the same year, the Soviets exploded the first two of the new series of bombs and a week later they let go the biggest blast in world history till then. The new device of 58 megatons had explosive equivalent of one third of the energy in all the nuclear bombs exploded till 1958.

EXPANDING NUCLEAR CLUB:- Throughout the years following the close of World War II, nuclear weapons development activity remained almost wholly confined to the United States of America and Soviet Union. However, they were not the only countries to develop what later came to be known as '**nuclear deterrent capabilities**'. For instance, Great Britain had made her first beginning in 1946. However, her entire effort was tied to the contribution to nuclear strategic forces of NATO. As such, no independent recognition, of her effort could be and was, therefore, taken. The first European country to make a determined bid to possess her own independent nuclear deterrent was **France**. The decision to turn her Atomic Enrgy Programme to military uses was taken by the Fourth Republic in 1950. The French case was advocated most forcefully by President Charles de Gaulle. In keeping up with the need for planning in defence, the French policy was in the first instance projected in two Five Year Plans. The

first 'Loi Programme' laid the foundation (1960-65). The second "Loi Programme (1965-70) introduced the necessary revision and accentuated the general direction. However, whatever the intensity of effort put in by France during the two 'Loz Programmes' and thereafter, she could not succeed in acquiring the status of major nuclear power. Spread over a period of about twenty years, France could succeed only in setting up her first Atomic reactor in 1956, detonating her first atomic bomb in 1964, first hydrogen bomb in 1967 and first nuclear strategic submarine in 1971. She could launch no missiles or artificial earth satellites. The honour, if it may be called so, has gone to China where the developments have deep, far reaching and in quick succession.

COMMUNIST CHINA:- Chinese interest in acquiring their own nuclear capability is claimed to date back to late 1940s. However, Chinese actually began their atomic programme around 1953. It is in this year that the Chinese set up their own Atomic Energy Institutions. In October, 1957, the Chinese entered into a secret agreement with the Soviet Union. Under this agreement, the Soviets apparently agreed to aid the Chinese in the production of nuclear weapons. In June, 1958, **Chairman Mao Tse Tung** proclaimed to the world that, it would be entirely possible for the Chinese people to produce their own atomic and hydrogen bombs within the next ten years. In the same year, the Chinese put into operation their first experimental 10MV capacity reactor. It was built with Soviet help. In 1959, the Chinese asked the Soviets to furnish them with the model of the atomic bomb. The Soviets did not comply with the request. In 1960, the Soviets withdrew their experts from China. The Chinese, therefore, launched their own production of nuclear weapons.

ATOMIC AND HYDROGEN DETONATIONS:— Chinese denoted their first atomic bomb on October, 16, 1964. The fact that the Chinese employed Uranium and not plutonium as had been expected by others, clearly indicated that they either had gaseous diffusion plant for the production of weapon grade U-325 or an alternative source of Uranium. The Chinese appeared to have not only the uranium producing system, but also two reactors producing weapons grade plutonium. With the combined resources of the diffusion plant and the reactors (whose efficiency could be significantly up-graded by the use of the weapons grade uranium), the Chinese appeared to be capable of producing in considerable excess of the one to two bombs per year. They also appeared to be very likely to be in a position to be able to detonate one or more devices in the very near future. The expectations and the calculations were not wrong. The Chinese detonated three more devices, each with the interval of one year. The last in this series was the hydrogen bomb detonated in 1967.

THE AMBITIONS:- The most astounding feature of the Chinese nuclear programme was its ambition. Instead of beginning with the production of plutonium (a fissionable material the production of which was relatively simple and upon which the initial programmes of all other nuclear powers, with the exception of US, had been based), China directed her efforts immediately to the production of U-235, even though the separation of this material was extremely difficult. Lacking the resources to set up a gas diffusion plant, capable of separating large quantities of fissionable Uranium (U-235) from the natural uranium from their own mines, Chinese succeeded in developing a short cut between 1960 and 1964. This consisted of a series of electro-magnetic separators, or else a series of centrifuges . . . in other words high speed separation of U-235 from natural uranium. This method made it possible for the Chinese to test their atomic bomb in 1964. The bomb was a great deal more refined

than the first Soviet, first British and first French bomb. Another confirmation of this orientation towards quality in Chinese programme appeared three years after . . . in 1967 . . . when they succeeded in testing their hydrogen bomb one year before France (despite the fact that the latter had commenced her nuclear programme right after the war). Furthermore, the Chinese succeeded in air dropping the device, thus indicating that they had already miniaturised their war weapon. This was a remarkable feat because even the Americans had taken four years to miniaturise their weapon. Also in 1967, the Chinese put on steam a big plutonium reactor which gave them second source of fissionable material for their programme. Towards the end of 1971, the Chinese were estimatable them to produce several dozens of Atomic and hydrogen bombs. Their arsenal at that time was claimed to amount to some 100-200 bombs. China was also claimed to possess various types of carriers for their weapons. On all accounts, the Chinese had a nuclear deterrent force, which although far small-to have a production capacity of a few hundred kilos of U-235. This could enter than the USA and the USSR arsenals, was sufficient to make even those powers 'stop and reflect' If Chinese could succeed, which appeared more likely, their facilities for isotopic gas diffusion separation, which were already under construction in 1965, and to develop an atomic missile launching submarine (The Chinese Darian Shyards had been making a Soviet type missile launching submarine with a conventional motor since 1964. (According to French sources, the Chinese had launched their first atomic propelled submarine in 1965), they would achieve their goal of keeping the US and USSR at a respectable distance from their Asian bounries.

THE MISSILE PROGRAMME:- The start of the Chinese missile programme coincided with the return of Dr. Chie Huseh-Sen from the jet propulsion laboratory in California (US) in 1956. Then years later, in 1966, the Chinese launched their first medium ranged missile (1000-1500kms) equipped with nuclear warheads. The Chinese claimed that the missile flew normally and the nuclear warhead hit the target, effecting a nuclear explosion. The Chinese further claimed that this successful testing marked the fact that Chinese science, technology and defence capabilities had advanced to a stage where they could successfully challenge any offensive postures by the US imperialists and the Soviet revisionists. Then in 1970, the Chinese succeeded in putting their first earth artificial satellite in orbit around the earth, thus confirming the fact that they had developed even longer range missile (2000-3000kms). But what was more important was that since 1963, Chinese had been working on a programme to produce an inter-continental ballistic missile (ICBM) which could have a range of more than 8,000 kms. In line of their ambitions to become a great power, once again the Chinese had set their sights high. Even if in fact, their first long range missile would utilise liquid fuel (as did the first Russian and American ICBMS), Chinese had a plant for producing solid fuels operating for some years already. It was, therefore, likely that the Chinese had decided to develop a solid fuel ICBM. In other words, a missile whose characteristics would be close to the most modern missiles in the Soviet and American arsenals.

THE CHINESE NUCLEAR THREAT . . . EXTENT:- The greatest strength and the greatest threat of Chinese nuclear capabilities had along been top priorities allotted to the development of nuclear deterrent. Between, October, 1964 and October, 1970, Peking had carried out eleven nuclear tests. One warhead was delivered by a medium range missiles. China had also carried out one sophisticated underground test. China had advanced from a first crude

atomic bomb exposition to a hydrogen bomb test more rapidly than enter the US or USSR. In April, 1970, and again the March of the same year, the Chinese again added technical prestige and advanced another step forward toward an inter-continental ballistic missile (ICBM) by putting satellites into orbit. Throughout the period the Chinese nuclear objectives included the primary aim . . . the development of a deterrent against a possible nuclear attack either by Soviet Union or by the United States of America. China had also sought technological prestige and great power status. While adopting a low risk strategy, China has exploited her nuclear capability to achieve political and economic goals . . . including dominant role in Asia. Further, Chinese have acquired impressive missile production facilities, the production of which was begun in 1963. The Chinese have tested extensively medium range ballistic missiles (MRBMS) capable of striking targets in much of the USSR. Chinese are claimed to have deployed such missiles and are estimated to have eighty to hundred of them operational by mid 1970s. Long-range ballistic missiles have been under tests and Chinese are expected to achieve initial ICBM capability against the US by 1973. The Chinese are considered capable of having ten to twenty five such missiles operational by the middle of 1970s, but more likely by 1977. For air delivery of nuclear weapons, China had hitherto had only few TU-4 bombers. However, China is now claimed to have produced at least thirty TU-16s, medium range bombers with an operational range of about 1,500 miles. Further, she is claimed to have productive capacity of five a month. As per this, China may already have more than doubled her strength.

STRATEGIC ARMS LIMITATION TALKS (SALT):- Immediately after the war, nuclear weapons were considered difficult and delicate feats of engineering . . . true marvels of science and technology. As such, they were considered wholly beyond the production capabilities of nations except the scientific and technical giants. However, within a decade following, they ceased to be so. Before the decade was over, nuclear weapons had been produced in a vast variety of sizes ranging from a fraction of the original bombs to monsters of explosive equivalent many times over. But the end of the next decade a total time span shorter than the life time of a single human generation, the family of nuclear weapons had passed through a true population explosion . . . both of the strategic and tactical type. They had grown to range from Bazooka shells . . . small enough to be carried by an infantry man . . . to the monsters transportable by ships only . . . from just a few kilotons to megatons, representing a jump over a thousand time or even more, on the original bombs. And still there was nothing to stop their further jump. Although under the overall control and command of the power giants, a sizable number of these weapons had been passed on to the armed forces of allied countries on both sides. According to Russian sources the US had as many as 375 major and approximately 3,000 minor bases and the number of nuclear warheads delivered to Western Europe touched the staggering figure of 7,200. The US sources had made similar allegations against USSR vis-a-vis the Warsaw Pact countries. The threat to human life in the event of a nuclear general war had become mortal indeed. The power giants were themselves compelled to find a way out. The result has since been **Strategic Arms Limitation Talks (SALT)**.

The Strategic Arms Limitation Talks were initially held between the United States of America and the Soviet Union. According to the Authority, the need for such talks stemmed from the over exposed positions of the United States

abroad and the increasing effort of the Soviet Union to match and excell the US as a truly global power. The most obvious motivation was the interest of both the super powers to limit the rising risks and costs, and declining returns of the strategic arms race, the development of missile accuracy, of multiple war-heads and serious discrepancies in anti-missile defences appeared to have made conceivable for the first time that, ultimately a surprise (first strike) attack by either side would deprive the other of all power to retaliate. An all out arms race, therefore, was likely to undermine both powers without offering either the hope of achieving superiority, for all purposes. A practical cause for such talks was provided when **President Nixon** of the United States renounced the traditional claim to superiority over the Soviet Union and accepted self sufficiency instead.

It was on January, 20, 1969, the date of President Nixon's inauguration in the United States, that the Soviet Foreign Ministry convened a special press conference to emphasise that Soviet Union remained ready to begin a serious exchange of view with the US on the mutual limitation and subsequent reduction of strategic nuclear vehicles, including defensive systems. A week later, President Nixon declared that, he was in favour of Strategic Arms Limitation Talks with the Soviet Union. This was followed by nine months of stately and some times preplexing diplomatic minuet. Ultimately, however, the two governments met at Helsinki. The meeting lasted from November, 16 to December, 22. (1969). At the conclusion of the meeting, a joint communique announced

FOR ALL YOUR REQUIREMENTS OF:-

ROLLER CHAINS, MALLEABLE CHAINS, CONVEYOR
CHAINS & SPROKET WHEEL FOR SUGAR, TEXTILES,
JUTE, DIESEL ENGINES, MOTOR CARS AND CYCLES
AND OTHER MACHINERY ETC.

CONTACT:-

MERCHANT BROS. & CO.,
LAD NIVAS, 44/62 ARDESHAR DADI STREET,
BOMBAY-4. (PHONE. . . . 354713).

that a general range of question and that further negotiations would be resumed in Vienna. The decision thereafter has been to hold talks alternatively at Helsinki and Vienna. US sources have themselves conceded that "Strategic Arms Limitation Talks have not produced any formal agreement, although the Government issued a statement on May, 20, 1971, in which they spoke of working out an agreement during the remaining months of the year that would limit the deployment of anti-ballistic missiles (ABM) systems and that would include certain measures of limitations of offensive weapons". Meanwhile, the expansion and modernisation of strategic nuclear forces has continued on both sides. The Soviet Union, having matched the American total of offensive strategic missiles (ICBMs) has continued to deploy additional intercontinental ballistic missiles (ICBMs), on land, to construct additional ballistic missile sub-marines and to develop more effective weapons for its offensive forces. At the same time, the United States have embarked upon an extensive modernisation of her strategic offensive weapons which, over the next four years, will add considerably to the number and effectiveness of the nuclear warheads which its own land and sea forces can deliver. Both countries have also pursued attempts to deploy an effective ABM system; the Soviet Union by improving the small system that it already has, the United States by starting the deployment of the **Safeguard System**, which was announced in 1969. However, Soviet viewpoint on the dismal and discouraging result of SALT is contained in an article by **V. Shestov** published in *Pravda* on February 4, 1971. Writing on the subject, Shestov has observed.

'With complete responsibility and in a spirit of goodwill, the Soviet Union entered into negotiations with the United States raised this difficult question, which affects the most important problems for the safeguarding of peace. As far as the Soviet Union is concerned, it is still ready to make its contribution towards curbing of the most dangerous . . . in its consequences . . . arms race in the history of humanity. The Soviet Union will welcome always sensible agreement on limiting strategic armaments, provided it was not of a unilateral character, benefitting one side only. Such an agreement would meet the vital interests, not only of the Soviet Union, but of all the people of the world. It is no secret that from the very beginning, the negotiations on the limitation of strategic weapons were not palatable for the United States Industrial complex, whose bigwigs continued to display nervousness even at the slightest hint of a possibility of cutting down the budget allocations for military purposes. To all appearances, the American imperialist circles continued to put the emphasis on the creation and deployment of the newest weapon systems in their military programmes, which according to unanimous evaluation by many experts, would lead to a new spiral in the ruinous and dangerous arms race. Even at present, certain circles in the United States are strenuously pressing the idea of the necessity for an expansion of every type of weapon system under the pretext of the so called 'territorial defence'. They are also continuing to press for measures to strengthen further the network of army, navy and air force bases. It is no secret that these bastions of American militarism, with their missiles and other weapons are aimed at the socialist countries, above all the Soviet Union and also against other peace loving countries.'

*With Best
Compliments
of*

HINDUSTAN TRANSMISSION PRODUCTS

Props.: **MADHUSUDAN LIMITED**

Chandivali, Kurla Vihar Road,
BOMBAY-72.

Manufacturers of:—

**ACITEX, ISONEX, SOLDEREX, HERMETEX
& THALEX** Brands super enamelled copper
wires & **ACITEX** brand strips.

Paper covered wires and strips. Cotton covered and enamelled cotton covered wires for all kinds of winding applications in the electrical field.

Wire drawing, wire enamelling and ancillary machinery.

Impregnating varnishes.

"HOMEWARE" plastic utility articles.

STRATEGIC NUCLEAR WEAPONS

COMPARATIVE POSITION . . . U.S.A . . . U.S.S.R.

NUCLEAR MISSILES:- According to the latest reports, with an estimated total of 1,510 ICBMs (about 100 of which are positioned in MR/IRBM fields), and may, therefore, be intended for possible use against targets, other than the United States of America, the Soviet Union has surpassed the United State's ICBM force of 1054. Soviet deployment has, however, slowed down considerably since the beginning of 1970, and may have reached or be approaching, its planned level. A number of underground silos of a new type have also been observed. However, it is not clear whether these are intended to fire new ICBMs (of which no other evidence has been reported) or to provide added protection for missiles of existing types, and especially for the large SS-9 missiles. If the latter is the case, this improvement of the silo for SS-9 system will match the testing of SS-9 multiple warhead cluster, containing three re-entry vehicles, in which the Soviet Union has been actively engaged since 1968. As against this, the United States has made no effort to increase its total of ICBM launchers. It has, however, continued the replacement of Minuteman-I missiles with Minuteman-III missiles, which began in 1970. Over 500 Minuteman-III launchers, each of which carry three independently targeted warheads, are to be deployed, under the present plans by 1975. This will have the effect of doubling the number of targets which the total Minuteman force can strike.

NUCLEAR SUBMARINES:- Although the Soviet Union has continued to launch Y-Class ballistic missiles submarines at a rate of seven or eight a year, US authorities claim that Soviet Union has not yet overtaken their country. Soviet Union has about 350 SLBMs in nuclear powered submarines (of which 320 are in modern Y-class boats). This is in contrast with the 656 launchers in the parallel American force. In terms of launchers totals, the Soviet Union's construction programme continues to bring it closer to the United States at the rate that could produce numerical equality by 1974. Moreover, the Soviet Union has been testing a new SLBM that, with its estimated range of some 3,000 miles, would be comparable to the American Polaris Vehicles. Meanwhile, the United States has begun to deploy more advanced Poseidon SLBM, with at least ten independently targeted re-entry vehicles. The completion of the planned programme from converting thirty one boats would raise the total number of nuclear warheads, deliverable by the American SLBM force from about 1,500 (capable of attacking some 656 separate targets) to over 5,400 (capable of attacking some 5,000 separate targets). For the longer term development work continued on the Underseas Long Range Missile Systems (ULMS) which might replace Poseidon submarines themselves at the end of 1970s.

STRATEGIC BOMBERS:- In contrast with the quantitative reinforcement of their offensive missile force, the Soviet Union and the United States have continued to allow their strategic bomber forces to dwindle. The number of American B-52 bombers in service has dropped to well below 500. As against this the Soviet Force of MYA-4 Bison and TU-20 Bear bombers is now estimated at

140 aircraft (with an additional fifty Bison tankers). On the American side, however, the effectiveness of the B-52 force is likely to be greatly increased by the introduction of the new short-range Attack Missile (SRAM), which has been ordered into production and which is expected to have an operational range of sixty to seventy five miles. Each B-52 would be able to carry upto twenty-four SRAM, while the proposed B-1 bombers, prototype development of which has been underway would be able to carry some thirty two of such missiles. The total number of force would thus be likely to rise sharply during the next five years. The Soviet Union has shown no apparent interest in matching the US in this particular effort. US experts claim to have observed the prototype of a new variable geometry (Swinging) bombers, but they do not seem to see clear that, even if produced, it would have an effective intercontinental capability. There have been no reports of any attempt to develop air-to-surface missiles for it (or of the existing Soviet bombers) of a type comparable to US SRAM.

ANTI-AIRCRAFT MISSILES:- The Soviet Union with some 10,000 anti-aircraft missiles (SAM) and 3,000 interceptor aircraft, has devoted a great deal more effort to territorial air defence than the United States. However, the United States has continued the development of its over-the-horizon (OTH-B) radar system, designed to detect attacking aircraft at a great range, and of an Airborne Warning and Control Systems (AWACS) designed to track aircraft flying below the coverage of radar systems. Both countries have continued to devote efforts to developing means of defence against ballistic missiles. The Soviet Union, which completed deployment around Moscow of sixty-four ABM launchers for its Galosh missiles in 1970, has been testing an improved ABM missile and may already have begun its deployment. It does not appear, however, to have modified the basic orientation of its ABM systems, whose missiles and radars are deployed in a manner that suggest a strong bias toward defence against an attack by American ICBMs. The United States has begun work on three sites for its safeguard ABM systems, each containing long range Spartan and short range Sprint missiles for the protection of a part of the Minuteman force against ICBM and SLBM attack. The first could be operational by 1974. Funds have also been requested for a fourth site, either at an additional Minuteman field or at Washington D.C. as well as for the continuation of development work on an alternative system, known as Tard Site (This would replace the safeguard Missile Site Radars (MSR) with large number of smaller and cheaper radars), for the more economical and less vulnerable defence of Minuteman.

UNITED STATES OF AMERICA:- (a) **Offensive:-** ICBMs 1,054 (Strategic Air Command-SAC); 400 Minuteman-Is; 500 Minuteman IIs; 100 Minuteman IIIs; fifty-four Titan IIs. SLBM: (US Navy) 656 in forty-one SSBMs; four with Poseidon (four more converting); twenty-seven with Polaris A-3s; ten with Polaris A-2s. Aircraft (SAC): Bombers: 520; seventy FB-111s in four squadrons; 150 B-52C/Fs in ten squadrons (two squadrons of B-52s and about 100 KC-135s are based in Southeast Asia); 210 B-52G/Hs in fourteen squadrons; ninety B-52s in active storage; Tankers; 420 KC-135s; strategic reconnaissance; SR-71s; two squadrons. (b) **Defensive:** North American Air Defence Command (NORAD), is a Joint Canadian-American organisation. American forces under NORAD are Aerospace Defence Command (ADC) and Army Defence Command (ARADCOM); combined strength 80,000 personnel. Aircraft (excluding Canadian). Interceptors: 522. Regular: eleven squadrons with F-106s. National Guard: Five squadrons with F-101s; twelve squadrons with F-102s; one squadron with F-104s. AEW aircraft; three squadrons with EC-121s. SAM. Regular: two bat-

talions with Hawks; five squadrons with 170 Bomarc-Bs. National Guard: twenty-seven batteries with Nike-Hercules. Radar and tracking stations: a chain including: the Ballistic Missile Early Warning System (BMEWS), with stations in Alaska, Greenland, and England; the 'forward scatter'. Over-the-Horizon radar system (this radar-system can detect ICBMs regardless of the direction or trajectory of their launch); the Pinetree Line; the thirty-three-radar Distant Early Warning (DEW) Line. Surveillance and tracking of objects in North American airspace is co-ordinated by the Semi-Automatic Ground Environment (SAGE) system. Fourteen locations are combined with Backup Interceptor Control (BUIC) Stations. A system (474N) of seven radar stations on the East, West and Gulf Coasts of the United States is designed specifically for the detection of submarine-launched missiles.

SOVIET UNION (a) Offensive: (Strategic Rocket Forces (SRF)—350,000 personnel). The Strategic Rocket Forces are a separate service, with their own manpower. ICBM: about 1,510. 220 SS-7s and SS-8s; 280 SS-9s; 950 SS-11s (about 100 have been sited in IRBM/MRBM fields and may have a variable range capability); sixty SS-13s (solid fueled). IRBM and MRBM: about 700, 100 SS-5 IRBMs; 600 SS-4 MRBMs (IRBs and MRBs are sited near the southern, eastern and western borders of the USSR; about seventy cover targets in China and Japan and about 630 targets in Western Europe). SLBM: 440 in sixty-one submarines (Navy). Twenty SSBN each with sixteen SS-N6 missiles; ten SSBN and sixteen diesel each with three SS-N-5 missiles; twelve diesel each with three SS-N-4 missiles; three diesel, each with two SS-N-4 missiles. Aircraft (Long Range Air Force): About seventy-five percent is based on European USSR, with most of the remainder in the Far East; in addition, it has staging and dispersal points in the Arctic. Long-range bombers: 140, 100 TU-20 Bears and forty MYA-4 Bisons Tankers; fifty Bison. Medium bombers: 700; 500 TU-16 Badgers and 200 TU-22 Blinders. **(b) Defensive:** Air Defence Command (PVO Strany) is a separate command of anti-aircraft artillery and surface-to-air missile units, using an early-warning system based on radar, and fighter-interceptor squadrons for identification and interception. Total strength 500,000 personnel (250,000 from Army and 250,000 from Air Force) Aircraft: About 3,200. Interceptors mostly MIG-19s, MIG 21s and SU-9s with a few MIG-17s still in service. Newer aircraft include the YAK-28P and TU-28 and, more recently, the SU-11 and MIG-23. Many of these aircraft carry air-to-air missiles (AAM). AEW aircraft; some modified TU-114s with the designation Moss. Antiballistic Missiles (ABM). Galosh: Sixty-four launchers for these multistage missiles are deployed around Moscow. They are believed to have a range of more than 200 miles and to carry a nuclear warhead in the megaton range. SAM. SA-1; An early vintage AA missile, SA-2: about 8,000. A two-stage boosted AA missile, slant range (from launch to contact with target) about twenty-five miles, effective between 3,000 and 80,000 feet. SA-3: A two-stage missile, probably intended for short-range defence against low-flying aircraft, to supplement SA-2. It has a slant range of about fifteen miles. SA-4: An air-transportable, mobile AA missile with solid-fuel boosters. They are twin mounted on tracked carriers and assigned to ground forces in the field. SA-5: A two-stage boosted missile developed in a long-range AA role. SA-6: A triple-mounted missile on a tracked vehicle. It is entering service as a defence against low-flying aircraft to supplement SA-4 in the field forces. Anti-aircraft Artillery. 14.5mm, 23-mm, 57-mm guns and ZSU-57-2 twin-barrel and ZSU-23-4 four-barrel self-propelled guns on tank chassis.

With Compliments From :

**NATVAR PARIKH
& COMPANY (PVT.) LTD.**

107-109, P. D'mello Road, (Opp Sugar Market), Bombay-9.



SUPPLIERS OF TRACTORS|VEHICLES TO

- EMBARKATION HEADQUARTERS,
- GOVERNMENT TRANSPORT CONTRACTORS,

**BUILDERS, SUPPLIERS OF HEAVY DUTY TRUCKS,
TRAILERS, LOW-BED TRAILERS, CRANES, FORKLIFTS,
AIR-COMPRESSORS & GUNNITING GUNS.**

Phones:- 324091 - 326793 ! Garage:- 331813.

**THE HOUSE FOR
GENUINE BEARINGS**

Phone :

3 3 8 6 8 8

A M C O

BEARING CORPORATION

139-A Abdul Rehman Street,
Bombay-3.

IMPORTERS AND STOCKISTS OF:-

- INDUSTRIAL & AUTOMOBILE BALL ROLLER
 - TAPPER ROLLER • THRUST AND NEEDLE ROLLER
- BEARINGS. * ALL KINDS OF STEEL BALLS, NEEDLER
ROLLERS AND PLUMBER BLOCKS.**

NUCLEAR WEAPONS-SYSTEMS

WEAPONS whose destructive properties are based on the use of nuclear energy released during nuclear transformation of substance during nuclear reaction, are called atomic, or more precisely, nuclear and thermo-nuclear weapons. At present, there are two types of nuclear weapons, explosive nuclear weapons and radiological warfare agents. The former are based on the use of the destructive action of explosion, which may take place as a result of explosive nuclear transformation of substance. The latter are based on the harmful biological effects of ionising radiation emitted during radio active-nuclear reactions.

MODUS-OPERANDI:- Explosive nuclear weapons may be used in the form of bombs, artillery shells, missiles rockets, with nuclear charges, depending upon the thermo-nuclear fuel. The short coming of all thermo-nuclear charge fuel is their bulkness and great weight. Radiological agents are generally used in the form of powders, liquids, smoke or fog, containing radio-active substances of considerable activity. These agents are mixtures containing radio-active isotopes and any substances with a short-half life, especially produced for military uses. They have no taste, colour or odour and their presence is discovered only by their radio-active radiation with the help of doximetric apparatus. They are intended for radio-active contamination of the ground, air, water, foodstuffs, the surface of machines, clothings, weapons etc. People may be affected by these agents as a result of their external radiation by radio-active rays or as a result of internal media when radio-active substance enter the human organism through the organs of respiration and digestion or through wounds of the ultigenerals of the body. These agents may be used as radio-active ammunition, a radio-actvie smoke and fog, radio-active in ordinary substances and radiological gases. Of all these methods, the most likely one is the use of radiological warfare agents for leading radiological ammunition . . . bombs and rockets. Radiological warfare agents. Although their capabilities and potentialities have certain definite and positive advantages, they impose several restrictions on their possible uses in war. Radio-active substances, with a short half-life, cannot be stockpiled for long periods, because their activity, and consequently, their military usefulness, decreases rapidly. The use of Radio-active agents also creates many complications with regard to their stockpiling and transport because of the danger to the health of Service personnel. On account of these, and several other causes, military experts, who once attributed to the radiological weapons, an almost decisive role in war, have of late, been susceptible of their absolute effectiveness, as such.

NUCLEAR EXPLOSIONS-TYPES:- Nuclear weapons may be exploded at various altitudes, depending upon the target pursued. However, as at present, types of explosions are aerial explosions at high altitudes and at low and medium altitudes, ground explosions and underground or underwater explosion. Aerial explosions at very high altitude are for the purpose of hitting aerial targets. Aerial explosions at low and medium altitudes are intended to hit ground targets . . . cities, populated areas, railroad junctions and industrial targets. Ground explosions are used for destroying very strong surface targets or underground targets which are not very deeply dug in. Underground explosions are those taking place while the atomic charge is placed underground to certain depth. These are intended to destroy underground structures, which may be situated at a considerable depth. Underwater explosions are used to destroy port installations in sea-ports and cities and also for the restruction of naval or merchant vessels.

DESTRUCTIVE POTENTIAL:—In contrast to the conventional weapons, nuclear weapons create four major factors of destruction, i.e. (1) **Shock or Explosive Wave**, which means 50-55 per cent of the total nuclear energy during the nuclear explosion. The shock wave has several characteristics. The first is the velocity of propagation. The second is the formation of near and distant zones of destruction over the surface of the ground. The third is the capacity to penetrate into buildings through openings. The fourth is related to the presence of zones of explosion. (2) **The light of radiation of an atomic explosion** which consumes nearly one-third of the total energy released during nuclear explosions and which causes thermal damage to exposed objects. The degree of thermal action of light radiation is determined by the amount of light energy incidental on a unit, on the surface of the irradiated objective and the phosphorous of the material. Light radiation aggravates the effect of the shock wave causing numerous fires. The action of the light radiation depends even more on the topography of the site than does the action of the shock wave. (3) **The penetrating radiation of nuclear explosion** which causes a short and powerful irradiation of unprotected persons and animals. The dose received during explosions depends mainly on the distance from the site of explosion. (4) **Radio-active contamination during the nuclear explosion** of site, of water, of food-stuffs and also of the surface of various objects, clothing, interarguments of the human body arising out of nuclear explosion and of the use of radiological agents. Injury to person in radioactively contaminated areas irrespective of the cause of contamination, take place generally by external irradiation or penetration of radioactive substance into the organism through the respiratory tracts, the digestive tract and through open wounds.

*With Best
Compliments
Of :*

NIMMCO NEW INDIA MOSAIC & MARBLE CO. PRIVATE LTD.
Factory & Office: Industrial Estates Post Box No. 6025 Lalbaug
Bombay-12 Phone : 440377 Grams : 'Nimmcotile'

BATTLEFIELD ENVIRONMENTS

WITH the introduction of nuclear weapons and the continued retention for the conventional ones, the God of War has become two faced. Under the circumstances, therefore, the question of nature and character of military operations and tactics and strategy . . . indeed survival itself . . . never an easy one, has assumed extreme complexities. The problems posed by the new challenge have become enormous beyond expression. It is because nuclear weapons have not so far seen combat employment and there is no body of practical experience to draw upon. It has all along been, the opinion of military experts that never again there will be a major war without the actual use or at least without the potential threat of the use of nuclear weapons. Armed Forces, as also the masses of people, will therefore, have to understand to the very maximum extent possible, the salient characteristics of war in the environments of nuclear weapons of the most ultimate type. This threat has receded to a large extent now. However, it has not ceased to exist.

ON LAND:—According to the latest thinking on the subject, the land battle in the environments of nuclear weapons will be characterised by the imminent threat of their use and this threat will force alteration of almost everything military forces do in war. When nuclear weapons are used, the battle will probably consist of extended non-nuclear periods of feints, minor clashes and even major attacks, followed by short, violent nuclear onslaughts. Nuclear tipped missiles will bring sudden and extremely heavy casualties to the units or areas they hit. They may even completely destroy them, unless they are effectively defended. Sudden losses in turn will create great fluctuations in evacuation and medical support needs and in replacement requirements. Nuclear warfare will also be characterised by massive devastation in rural areas, equal to or even greater than along the line of contact. Nuclear attacks will produce unsurmountable obstacles to surface movements everywhere. The land battles will also be characterised by highly effective air defence. The employment of modern air defence missiles will radically reduce the chances of aircraft survival over defended enemy territories. Only the use of earth-hugging vehicles and counter-attack air defence systems will make large-scale air movement possible. Battles and preludes to battles, will also feature intensive surveillance effort, by highly sophisticated means to locate the enemy. Counter surveillance measures will be equally intensive because units will soon learn that to be fixed in locations would tantamount to being destroyed. These revolutionary changes in battlefield environments will demand equally revolutionary changes in methods of operation. Minor alterations in tactics, equipment or organisation will not suffice.

In the offensive, small highly mobile combat teams will have to move from dispersed positions (where they do not present worthwhile targets) to the focal points or attack with lightening speed and stealth. They will have to strike rapidly and, once the mission is accomplished, they will have to disperse with equal mobility to avoid a devastating counter blow. The defence will have to present to the attacking enemy small, tough and extremely elusive combat teams that would refuse to hold any particular piece of ground scared, and yet force the attacker to pay dearly for all the ground he may take. The defensive teams will have to be thoroughly concealed, protected and dispersed so that the

overall defence is in a position to effectively absorb nuclear attacks without being shattered. The considerations of mobility . . . actually, hypermobility . . . will force many targets, earlier considered strategic because of their distance behind the enemy lines, to become merely tactical. Indeed the concepts of dividing strategic and tactical employment by measures of distances will become obsolete. Tactical objectives, getting deeper and deeper into the enemy territory, will demand of the modern armed forces to accomplish important missions at locations, hundreds of miles away, not by painfully fighting overland to the objectives, but by moving by earth hugging aircraft. However, it should not be construed that air movement will be the only means of our transport. The demand for greater ground mobility will also have to be met by all other types improved carriers capable of high cross-country mobility. These movements and attacks will have to be preceded by missile artillery attacks to disrupt defence by air mechanised patriots to seize air-landing areas and by air-mechanised cavalry, to suppress air-defence weapons and block counter-attacks on the route of movement.

ON THE HIGH SEAS:—According to the latest thinking, sea-battles in the environment of nuclear weapons, sea power like air or land power, has become an obsolete term. It is no longer subject to accurate definition in warfare. Not only have the strategic missiles extended the range of ships striking power, but the ships have extended the range of missiles even more. Nuclear powered ballistic missiles submarines have acquired almost unlimited range, higher speeds than surface ships and ability to engage directly in strategic missiles warfare. It is no longer control of the seas, it is nuclear deterrence . . . it is no longer sea power either, it is strategic missile power. The nuclear age has gone to sea. In mobility and in weapons, the marriage of the missile and the ship has transformed the two dimensional Navy with control of the seas as its objective to a three dimensional navy with the added objectives of attack against and defence of the great continental land masses of the world. Strategically, the role of the Navy has been transformed by the atmosphere, and every land masses on earth is now accessible to modern and naval power. Nuclear powered engines, which require no air, have enabled submarines to remain completely submerged for indefinite periods and their mobility and invisibility has given them unequalled defensive invulnerability. The submarine-launched ballistic missile has, moreover, another major asset. It draws the lighting of enemy nuclear attack towards the sea rather than as land-based missile bombardment force. The Naval planes, flown from carrier decks, have a definite role in the nuclear war. However, the nuclear role of naval aviation is now more tactical than strategic. The targets of naval aircraft are primarily near the periphery of the enemy's territory-submarine bases, air fields, radar and missile sites, rather than targets deep in the interior. The Navy, like the other Services, has also developed the so-called tactical, or smaller nuclear weapons for specific purposes. A whole family of new naval guns has been under way, some with rocket assisted shells, others with devices to multiply present ranges many times over, have been under study and development. Any or all of these, would utilise nuclear power for surface ships which provide virtually unlimited high-speed and cruising range and free the ships from dependence upon oilers, eliminated stack gases and provide so many other advantages that a nuclear-powered fleet for all major vessels has become certain.

IN THE AIR:—Since the beginning of the armed conflict, the warriors have tried to improve their ability to strike deep into an enemy fortress with

minimum danger to themselves and thus support their assaulting troops better. After World War II, the advantages of strategic artillery power in the form of long-range ballistic missiles, became obvious and extensive further research and development was launched, particularly by the power giants, United States of America and the Soviet Union. Despite the phenomenal progress made in the field, the full impact of missiles on aerial warfare could not be predicted. However, with the growth and development of inter-continental ballistic missile, it became clear that, air warfare of the type witnessed during World War II, and thought possible and probable in the years immediately following the close of the war, had become obsolete. The air had become but a thin crest through which the missile artillery could flash in seconds at the beginning and the end of its ballistic trajectory separated by thousands of miles. With immediate effect, the margin of safety, still provided by time and distance, appeared to be almost completely swallowed up . . . World appeared to be fully set for a war of utter and absolute destruction in what came to be known as missile warfare. As at present, it is the considered opinion of military theoreticians that, with the missiles armed with nuclear warheads becoming operational, the entire concept of air power has changed. Actually, it is no longer air power, it is missile power which has emerged as the final arbiter in war.

SOVIET VIEW POINT

ACCORDING to the Soviet theoreticians the creation of nuclear warheads and the combination of them with missile carriers and launching devices of various kinds has facilitated the swift introduction of the new weapon into all branches of the armed forces. This weapon has brought about a complete revolution in the art of warfare and has introduced a basic alteration in the means of conducting war and demand a reappraisal of the existing principles of war. Specific changes in weapons have objectively impelled developments in the modern military art along two lines . . . conducting military operations by means of nuclear weapons and conduct of military operations using conventional armaments. Definite changes in all means of armed conflict have been and continue to be introduced into the military art. However, the nuclear rocket missiles has objectively produced the most clearly defined shifts in the means of conducting war. The most important shifts hitherto have been:—

- (a) The area of the zone of tactical, operational and strategic military action has significantly extended. The depth of the modern integrated all arms battle has increased. The scale of war has widened, the process of destruction of enemy targets has speeded up many time over and the pace of military actions has increased leading to rapid and abrupt changes in the situation.
- (b) Employment of nuclear weapons has changed substantially, not only the nature of the battle, but also the relationship between grand strategy, strategy and tactics. Nuclear weapons have made it possible to resolve simultaneously the tactical, strategic and grand strategic aims. The opportunity for the grand strategic leadership to influence the conduct of operations has increased significantly, as also the influence of strategic leadership on the tactical activity of troops. Moreover, employment of strategic nuclear weapons have acquired the capabilities to exert a decisive influence on the character of the tactical battle.

(c) The use of nuclear weapons has further emphasised the role of the offensive as a decisive form of military action, even giving rise to the necessity to solve defensive tasks by means of active offensive operations. It may very well be assumed that the future offensive operations will be characterised by a considerable increase in the special dimensions (speed and depth) of the action, greater dispersion in the formation of the fronts and armies, an increase in the tempo of the offensive and in the dynamics of the military operations. In so far as the defensive operations are concerned, counter preparations fire and strikes against second echelons and reserves by nuclear weapons have acquired a decisive significance. (d) Another factor which has affected the principle of concentrating the efforts of the troops in a decisive sector. While the massing of nuclear strikes has acquired paramount significance, this has not applied to conventional forces and equipment. In fact, under these conditions, the maximum possible dispersal of troops has called for rather than concentration. In view of the threat of nuclear strikes being directed against them. Of course, the extent of such dispersal is not unlimited, being restricted by the need to preserve the combat stability of units and formations and reliable and uninterrupted control of the troops. (e) The surprise factor has increased in importance and the duration of the consequences of a surprise attack on the conduct of subsequent operations has also increased. If in the past, armies needed a considerable time to repulse an unexpected enemy blow and to mount a counter attack. In nuclear war surprise attack is very likely to have more serious consequences. The increased significance of the surprise factor has made more acute the problem of maintaining troops at a constant high level of battle-readiness, capable of rapid and organised reaction to enemy attacks. (f) The advent of nuclear rocket weapons has provided a material basis for the principle of simultaneous striking of the enemy throughout the whole depth of his battle and operational formation and the destruction of the most important military economic targets in the deep rear of the combatant states. This has made more acute such problems as restoring the combat effectiveness of units, formations, HQ elements and also the mounting of subsequent military actions. All these measures have to be carried out under extraordinary complex conditions, in confused situation and in a 'keen battle to win time'. (g) Much more frequently than in the wars of the past, the necessity arises in a nuclear war to transfer the main assault or effort from one direction to another. In such conditions, troops who may have suffered considerable losses, will have to seize every opportunity to exploit any signs of success in any direction when it may appear that effort in such a direction will prove decisive. Consequently, the solution of military problems by the use of nuclear weapons would be characterised on the one hand by placing the crucial aims before the troops, and on the other by exercising daring and initiative on the part of the units and formations. Under such conditions, nothing will be allowed to impede the troops in the fulfilment of their set tasks. Even a breakdown in mutual support and loss of control by the senior command would not be regarded as a justification for the slightest inactivity. Success on the field of battle would be possible only when the decisions of the commander and the actions of the troops are permeated with the striving to attain the set objectives at all costs.

TACTICS AND STRATEGY

DURING the years following the dawn of the nuclear warfare, a very large number of conclusions were made on the strategy held valid for this new and all destructive form of warfare. Despite the vast measure of disagreement in details, all authors and architects of the new strategy were agreed that, the new strategy will have to be total, covering not merely the phenomenon of the nuclear weapons and its possible successors (outer space, biological, warfare, etc.) but also the more limited problems of conventional and indirect warfare. This new strategy will have to cover the vast changes already resulted or anticipated to result from the application to defence of the resources of science and industry.

BEAUFORE'S CONCEPTS:—General Andre Beaufore of the French Army has since been recognised as one of the top experts on the subject in the Western World. According to him, there are four courses whose efficiency has been tried in turn and resort made to the next best alternative. Currently, however, all these four forms are combined into a most complicated strategic theory still open to further additions and amendments. The four forms are:—
 (a) **Preventive Destruction of the Enemy Weapons** (The direct offensive method): This was found suitable only in the initial stages. Its advantages began to evaporate when the resources on both sides increased, greater dispersion tactics became more possible, the number of targets arose and the increasing number of targets could not be pre-planned, since the enemy could make preparations to disperse on an alert.
 (b) **The Interception of Enemy Nuclear Weapons in Transit:**—It was felt that, if a fully effective interception system could be developed, there would be no further requirements for preventive action, (which was politically dangerous) nor for physical protection. The enemy threat of reprisal, it was thought, would lose its effect. This was an ideal solution. However, from the technical point of view, it was extremely difficult, both to achieve and attain at an adequate level.
 (c) **Physical Protection Against the Effect of Nuclear Explosions:**—(a further defensive method). Throughout the period, fully effective interception, though it had its ups and downs, remained problematical. The next step, therefore, was to take all possible steps to adequately reduce the effect of nuclear attacks by physical protection. Before the advent of the thermo-nuclear weapons, it did seem that there were some possible solutions i.e. underground protection, dispersion, mobility, protection by concrete, etc. The methods, individually or even collectively, could not ensure absolute protection. Their effectiveness was further reduced after the advent of thermo-nuclear weapons.
 (d) **The Threat of Retaliation:**—(An indirect offensive method): The efficacy of the earlier three methods of defence, individually and collectively, remained both changeable and uncertain. The only true protection was, therefore, sought to be found in the threat of retaliation. This was the first and the simplest form of the deterrent strategy. The basis of this new form of strategy was the material factor . . . a striking force (better and offensive force) sufficiently powerful to deter the enemy from employing his own striking force . . . a high degree of accuracy and ability to penetrate.

SURVIVAL TACTICS:—There were all along, sufficient uncertainties surrounding the material factor, however, the situation became infinitely more complicated when it was not known as to who would be the first to fire the

IN

**THE SERVICE OF OUR GALLANT
ARMED FORCES WHO HAVE
SERVED THE COUNTRY BEST**

**AUTO & INDUSTRIAL
PAINTS CORPORATION**

312, KALBADEVI ROAD, RAWJI HOUSE,
BOMBAY-2. (PHONE: 314484.)

**MANUFACTURERS OF ALL TYPES OF THINNERS,
LACKERS AND INDUSTRIAL COATINGS.**



FACTORY:- 477 MIDC Industrial Estate, Dombivali.

DEPOT:- Shroff House, 42, Sleater Road, Opp. Grant Road Station,
Bombay-7. (Phone:- 370347).

After Office Hours Phone:- 453469.

**FOR ALL YOUR REQUIREMENT
OF**

**G. I. & M. S. Pipes, ERW, Seamless & Stainless Steel Pipes & Fittings,
M. S. Bright Bars, Black Bars 11 S. Sheets, Plates, Flats, Angles, Boiler
Quality Plates & G. P. Sheets, Neoprene Oil Suction, Water Suction &
Delivery Hoses, Air Water Pneumatic Hoses, Oi Seals, Rubber Valves
and any Components from hard rubber, Belting in Hair, Canvas, Leather,
Rubber. V-Belt, Link Belt, Belt Lacing, Ball Bearing, Roller earings etc.
Bolts, Nuts, Washers, Rivets, Flat Nails, Wire Nails, Wire Rope, Asbestos
goods Teflon Tape, Rod etc.**

Contact

Bharat Tube Corporation

Manufacturer's Representatives,

176, Abdul Rehman Street, BOMBAY-3.

PHONE: 328190 GRAMS:— "BHARATTUBE", BOMBAY.

shot. This factor was not of great importance when aircraft were still slow and there was sufficient time to permit attack and retaliation pass each other in the air. This, however, became extremely difficult when rockets became operational and they provided to the first strike so great a destructive capability that effective response became doubtful, uncertain and inadequate. Since the deterrent effect thereafter depend not upon the capability of striking force, but its residual capability after it had absorbed the first strike, it led to the development of survival tactics. The object of these tactics, exceedingly expensive and complicated though, was to: (a) Cut the alert period to practically nothing. Ensure that aircraft were in the air and missiles fired before the arrival of the enemy strike. (b) Project firing platforms either by mobility or by dispersion or by concrete, with the object of forcing the enemy to expend largest possible number of weapons on each target. The result inevitably depended on the relative efficiency of the survival tactics on each side . . . prognosis regarding the accuracy of the attack.

COUNTER FORCE-COUNTER CITY TACTICS:—At this stage, serious thought was also given to the widely divergent appreciations of what exactly, in the psychological point of view, could be adequate destruction capacity. Some theorists believed that the destruction of a few major cities could be enough to make any modern state capitulate. Others held the view that the destruction of the enemy nuclear weapons was the only effective methods because they would thereby be disarmed and no attack would be possible. These differing ideas, were summarised in two conflicting tactical doctrines known as 'counter forces' and 'Counter city' tactics. The choice between the two solutions to the problem was different indeed. Besides, these brought in the open, certain highly important but unavowed motives. He who played the counter force game had to encounter certain doubts about the validity of his deterrent. Since he admitted that nuclear war, involving more or less full employment of the strategic striking force was possible . . . a fact which immediately increased his capacity to deter. He who played the counter city tactics had to believe in the absolute validity of his deterrent. If it did not deter and war resulted, he could have nothing to fall back upon, except mutual suicide. The first step necessary for the operation was to ensure that the striking capacity was on sound basis and, as a result gave an impression of verisimilitude. This was known as credibility. It depended, not merely on the material balance between the two sides, but also on the magnitude of the risk as compared to the issue at stake. However, the game could be played only if equal credibility on both sides could end to cancel each other out. The most significant fact about it was that, for the second rank nuclear powers, there was no choice for they could never have the prospect of possessing the forces necessary to carry out counter force tactics. It was a question as to how far the counter city tactics could be gainfully employed by them.

SHIELD FORCES:—Whatever the efficacy of the theories evolved, it was still not a complete and fool-proof system. The next proven danger was found in the existence of several areas of nuclear capabilities in which there was certain amount of freedom represented by the whole range of action starting from wars. The criterion in each case was that, the strike must be small to justify the use of the threat of nuclear reactions. This opened up a new area for the strategy of deterrence. The aim of this was to use other methods to round up the deterrent effects of the threat of nuclear weapons. Its objective was to

reduce, and if possible, to eliminate the enemy's freedom of action. Two methods of achieving this deterrent effect were evolved. This first was a concrete one. It consisted of **facing the enemy with a complex of military forces adequate to defeat any operation he may undertake within the area of freedom of action, which he believed he had. This was the basis of "shield forces" . . . all tactical land, air or naval air forces, defending vulnerable areas.** It was also the reason for the maintenance of mobile reserves capable of instantaneous movement to the threatened areas. The existence of these forces was expected to free the threatened areas from all or nothing dilemma, i.e. from the necessity to choose between embarking upon mutual holocaust or accepting a fait accompli. **The second was physiological. It consisted of creating and maintaining a threat of retaliation in the event of local conflict.** With this threat of escalation, the importance of the issue at stake was once more clouded by uncertainty, even though initially, it might have appeared small. This being so, the existence of tactical atomic weapons with the risk of escalation, which their use could imply, played most important part in the strategy of deterrence.

NON-NUCLEAR STRATEGY:- When nuclear retaliation and the threat of escalation became less credible, the strategy of the deterrent naturally reached an impasse. Under these circumstances, the only course open was to resort to **non-nuclear strategy.** It naturally implied that, on the top of the exorbitantly expensive effort made in the nuclear field, must also come comparable effort in the conventional equipment . . . just as if the nuclear weapons did not exist. When such a stage was reached, the deterrent system was considered to have become complete, the striking forces balanced each other. Conventional forces also acted as deterrent against a limited war. The effectiveness of these three sorts of actions depended to a great extent on the uncertainty. However, complementing to each other, and welded into an unified system, they were considered to make an overall balance possible. The only escape still from the combination was in the field of political or economic activity, and the utilisation of revolutionary movements in foreign countries or even wars conducted by proxy. As a result of this logical thought, the conventional deterrent, complementary to the nuclear deterrent was used to construct deterrent system even in the indirect field.

STRATEGY OF ESCALATION:—Escalation is a relatively new word in English language, although it is now becoming more common in newspaper headlines. Dictionaries, it appears, have yet to define it in a military sense. To many people, escalation connotes an automatic rise in the scale of warfare from the level of incident to the level of catastrophic nuclear exchange. But to more and more serious students of military strategy it has come to describe the kind of **calculated risk taking**, that is an established feature of limited conflict in the nuclear age. There are many who think that study of escalation is dangerous and perhaps, immoral. However, there are others who believe that it is dangerous and, perhaps, immoral, not to understand how nations might act under pressure of mounting crisis. However, whatever, the opinion for or against the study of the strategy of escalation, undoubtedly, it is the latest contribution to the understanding and interpretation of the stages that politico-military relations of nuclear powers may change ending up in a central war. Herman Khan of United States, the author and architect of the new thought, has provided an elaborate and impressive list of forty-four rungs . . . a metaphorical ladder . . . that provides a convenient list of some of the more important options facing the strategist. This ladder indicates that there are many

continuous paths between a low level crisis and an all-out war, none which are necessary or inexorably to be followed. Presenting the ladder, he has cautioned that there is no attempt by him to recommend any, definite course of action. All that he has attempted is to describe the way-stations of an ascending conflict, so that the elements can be recognised and the distance from an all-out war estimated and, perhaps, measured.

(1) Ostensible Crisis:—This represents the stage when one or both sides assert, more or less openly and explicitly, that unless a given dispute is resolved in the immediate future, the rungs of the escalation ladder will be climbed.

(2) Political, Economic and Diplomatic Gestures:— This represents the stage of legal but inconveniencing, unfair, unfriendly, inequitable or threatening acts carried out against the opponent to punish or put pressure on him.

(3) Solemn and Formal Declarations:— This represents the stage of resolve and commitments which may not necessarily be hostile.

(4) Hardening Positions: This represents the stage of pointing out vividly to the other side of the population or its allies the totally destructive character of war that it could impose.

(5) Show of Force: This represents the stage of drawing the attention of the opponent, directly or indirectly, silently or noisily, to the capabilities of using force, if need be . . . movement of the naval or air units, mobilising reserves, conducting provocative military exercises or manoeuvres. Even routine developments may be some of the ways adopted for the purpose.

(6) Significant Mobilisation: This represents the stage of mobilisation with an indication of readiness to call on more forces or accelerate the arms race.

(7) Harassing Acts of Violence: This represents the stage when legal harassment fails to resolve the crisis and one or both the parties are compelled to have to illegal acts to confuse, exhaust and frighten and even otherwise harm, weaken and demoralise the opponent or his allies.

(8) Dramatic Military Confrontations: Such confrontations are direct tests of nerve, resolve and recklessness. They are also dramatic enough to make one to take note of what has happened.

(9) Provocative Diplomatic Break: This act is intended to communicate to the opponent that one's reliance on the traditional and peaceful measures of persuasion is at an end and that act of force may now be resorted to.

(10) Super-ready Status: This represents the stage when forces can be dispersed, leaves are cancelled, preventive and routine maintenance halted, training deferred, every possible piece of equipment and unit put in combat ready status and limited war forces deployed.

(11) Large Conventional War Actions: This stage generally represents undeclared war or border fighting leading to further deepening of the crisis.

(12) Large Compound Violence: By this meant achieving a high overall level of escalation, while still keeping each separate act as relatively low on the ladder by retaliating or escalating in a theatre completely different from that in which the primary conflict may be waged.

(13) Declaration of Limited Conventional War: This may be done to achieve a clear-cut unilateral announcement of no nuclear first use, or a setting of limits to conventional war, or both. Such a step would be intended to have grave symbolic political and moral effect upon one's own country and the opponent.

(14) Bearly Nuclear War: It may occur when in a conventional warlike act or in the super-ready status, a nuclear weapon may be used unintentionally.

(15) Nuclear Ultimatums: This may occur when one or the other side seriously considers the possibility of a central war and communicates the fact to the other side.

(16) Limited Evacuation: This would most likely be a quasi-official move ordered by the Government either for bargaining or prudential reasons, or both.

(17) Spectacular Show of Force: This would involve using major weapons in such a way as would not obviously damage, but appears

With Best Compliments From :

The Manufacturers of SUITINGS

"INSIST ON NEERU'S SUITINGS"

Manufactured by : **NEERU SILK MILLS**
Mathurdas Mills Compound,
Lower Parel, BOMBAY-13.

Phones :
373159 & 370594

Selling Agents :-
B. NAGINDAS & COMPANY
Narayan Chowk, M.J. Market,
BOMBAY-2.

Grams :
'NEERUMILLS'
BOMBAY-13.

Phone No. 319597

*For
Your Requirement
of
Precision Measuring Instruments
Contact*

M. NAHASKHLAL & CO.

93, NARAYAN DHURU STREET, BOMBAY-3 (BR)

It is the
HOUSE OF QUALITY AND RELIABILITY

determined, menacing and reckless. (18) **Justifiable Counter Attack:** Sufficiently specialised and limited move to appear a reasonable response to provocation and to degrade the military capability, prestige or morale of the opponent. (19) **Peaceful world-wide Embargo or Blockade:** This may be an extreme measure of non-violence, coercion brought to bear against an opponent. (20) **Local Nuclear War . . . Exemplary:** One side may drop one or two nuclear bombs in order to show the other side that, unless it backs down or accepts a reasonable compromise, more drops would follow. (21) **Declaration of Limited Nuclear War:** This would mean a formal declaration to set relatively exact limits to the type of nuclear actions that it may intend to initiate and also indicate the type of retaliation it would be prepared to countenance from the enemy without escalating further himself. (22) **Local Nuclear War . . . Militarily:** This would envisage the immediate use of hundreds of nuclear weapons in reply to even a conventional attack. Nuclear weapons would be used for defence and also for the destruction of the opponent's local capability. The scale of action and targetting would be dictated by these military considerations only. (23) **Unusual Provocative and Significant Counter-Measures:** This would mean deployments of manoeuvres that may have the effect of increasing an opponent's vulnerability to attack or otherwise degrading his capability, morale and will. (24) **Evacuation (about 70 per cent):** At this stage, the situation may be very close to a large scale war. (25) **Demonstration Attack On Zone of Interference:** This may be on an isolated mountain top or empty desert, but capable of doing dramatic and unmistakable physical damage. (26) **Exemplary Attacks Against Property:** This would further involve such installations as bridges, dams and gaseous diffusion plants. (27) **Exemplary attacks on Military Targets:** This may represent the effort to destroy portions of the other side's weapons system but in a careful way, so as not to cause much collateral damage. (28) **Exemplary Attacks on Populations:** These attacks would probably be much higher on the ladder. However, if the balance of terror becomes sufficiently stable and governments are believed to be under intense and graduated mutual deterrents, even these attacks would occur without an eruption or spasm leading to a central war. (29) **Complete evacuation (About 95 per cent):** This would represent the immediacy of the beginning of large scale warfare. (30) **Reciprocal Reprisal War:** This would be a war with more or less continual exchanges. (31) **Formal Declaration of General War:** This formal declaration would indicate that the side issuing the declaration has no intention of attacking but intends to remove whatever inhibitions there may be against the use of force and coercion to put pressure on allies and some neutrals to co-operate and mobilise a nation's facilities for defence and to suppress internal opposition. (32) **Slow Motion Counter Property War:** In this attack, each side will destroy other's property while still attempting to force the other side to back down. (33) **Slow Motion Counter Force War:** This would be a campaign in which each side will attempt attrition of the other side's weapon systems over a period of time. (34) **Constrained Force Reduction Salvo:** The attacker at this stage will attempt to destroy a significant but a small portion of the defender's force in a single strike while still avoiding undesired collateral damage. (35) **Constrained Disarming Attack:** The attacker at this stage will try to destroy a significant portion of the defender's first strike nuclear force and even some of his second strike weapons. (36) **Counter Forces Attack With Avoidance:** This attack would differ from a constrained disarming attack by being less scrupulous about avoiding collateral damages to cities and, by not deliberately sparing much, if any, of the enemy's second strike weaponry. (37) **Unmodified Counter-Force Attack:** Targets at this stage will still be the enemy weapons systems.

However, the military plans would be formulated and the operations carried out with general disregard as to whether enemy civilians are killed or non-military property is destroyed. This attack might be described as a classical form of all out or total war. **(38) Slow Motion Counter-city War:** This would take the ultimate form of deliberate selective and controlled response . . . but the one, not necessarily or even likely to be beyond the psychological capabilities of decision makers, if only the alternatives were total destruction or complete capitulation. **(39) Counter Value Salvo:** This would represent the possibility . . . in fighting a slow motion counter force or slow motion counter value war. This would mean that one side will fire a large number of missiles at civilian targets, either in advertent or deliberate eruption. **(40) Augmented Disarming Attack:** This would be an attack on military targets deliberately modified to obtain as much collateral counter city damage as a 'bonus', as feasible. **(41) Civilian Devastation Attack:** This would represent the usual popular picture of nuclear war, in which there would be a deliberate effort to destroy or greatly damage the enemy society. However, this should still be distinguished from spasm or insensate war only by having some elements of calculation and by the fact that, there may still be some withholding or control. **(42) Some Other Kind of Controlled General War:** At this stage, of rational, all-out, but controlled war, military action would be accompanied with threats and promises and military operations themselves would be restricted to those that would contribute to attaining victory . . . an acceptable or desirable peace treaty. **(43) Spasm or Insensate War:** The figurative word 'spasm' is chosen because it describes the usual image of a central war in which there is only a go ahead order and all the buttons are pressed. A spasm war, of course, may occur, the attempt will still be made to prevent it.

COUNTER FORCE THEORY:- In the opinion of Herman Khan, a number of officers and administrators, mainly in the US Air Force, are convinced that thermo-nuclear war is possible, conceivable, acceptable and that it will be only won or lost in the classical sense. The officers agree that, it would be preferable to prevent such a war from taking place. However, they think that, the only effective prevention is the establishment of a force capable of winning such a war and accepting the surrender of the enemy. The group conceives that, this type of war might come in one of the two major ways, **one atomic power giant might launch a major attack against the other. Alternatively, it might act against the other in some other area than the mainland, in such an intensely provocative way, that the other giant would be compelled to decide to make a first atomic strike.** Major objections have been voiced against the theory. Most of these objections, particularly in the United States, have come from the two Armed Services . . . the Army and the Navy . . . These objections have been directed, first against the hypothetical model of the thermo-nuclear war devised by the Counter Force theorists, and second, against the kind of society that would result from the acceptance of the Counter Force system. The objections briefly are as follows: (a) To deal with the imaginary thermo-nuclear war, the possibility of actually separating atomic forces and great population is questionable. (b) Such a war might easily destroy some of the vital links in the National Chain of Command, leaving small groups of atomically armed forces bewildered, fearful and free to attack at will. Such disintegration would be the likely result of intense pressure of continuous atomic attack lasting several weeks. If such a breakdown occurred, the war would not be fought along the lines of Counter Force Theory. (c) The feasibility of civil defence preparations that would fit Counter Force Theory would always be open to serious questions. Apart and aside of the probableness of expenses,

if the huge underground city shelters are built, it would be questionable whether they would be usable in the desired and expected manner. (d) Entire theory would be open to objections from the viewpoint of rationality in military planning. The entire Counter Force System, subtle, sudden and mobile, would increase the temptation to the enemy to make an overwhelming indiscriminating attack. (e) Counter Force Strategy is not only impossible of practice in war, but it is also overwhelmingly dangerous. (f) Accepting Counter Force Strategy would also mean accepting an arms race without end.

COMBINED DETERRENT THEORY:- Some officers and administrators, particularly in the US Army and the Navy, are convinced that, to win or lose a thermo-nuclear war is inconceivable. They believe that preparing to fight is the only way to prevent it. They, therefore, prefer to make the outbreak of such a war as unlikely as possible by means of sharply increasing its terror. The result of such planning and activity they hope, could be the elimination of all but the old fashioned conventional wars. They have based this theory of deterrence, not surprisingly, on a combination of the particular weapon systems and skills of the Army and the Navy. The theorists argue that, if both hostile forces have great mass of population open to atomic attacks, and that, if on both sides the forces mounting such an attack are themselves not invulnerable, the attack will never be mounted. They argue that any nation, which under such circumstances, would strike first, would condemn its own population, its economy, its government, its very existence to certain depth. Thermo-nuclear attack would fail to destroy the enemy's invulnerable capacity, and that capacity would then be used to destroy its own cities. They further argue that the existence of such an invulnerable striking force would bring all the pressure of hope and fear against any idea of first atomic strike . . . that the invulnerable deterrent with vulnerable population would stabilise the international situation. Instead of pressing both sides toward an pre-emptive attack, the invulnerable deterrent would press both sides to think long and hard before attacking. Finally, the argument runs that this situation would constitute a plateau in the arms race. They would suggest that, when both sides reach the level of the invulnerable deterrent, they would instead negotiate. The advocates of the combined deterrence believe that the old fashioned foot soldier and fleets would still hold the key to deterrence, provided infantry and naval equipment are modernised. They believe that, increased tactical readiness would not only deter actual military invasions, but it would also check internal subversions and revolutions. There have been many objections to the theory of Combined Deterrence and they have been voiced at various levels. Some of the objections have questioned the very possibility of building up of a credible deterrence along the lines suggested by this theory. Others have disputed the belief that a society and international order based on such deterrence would at all be stable or tolerable. In their opinion, the question of military possibilities rests squarely on the alleged invulnerability of the Polaris, even against existing methods of anti submarine warfare deterrent . . . tactical readiness . . . has also been severely criticised. The criticism has been directed against the high fire-power wing of theorists. High fire power in terms of atomic chemical or biological weaponry has been considered clearly capable of leading upward into a thermo-nuclear war. Certainly few powers would want atomic or biological wars fought over their countries and they would be likely to respond to such weapons by pressing the use of thermo-nuclear weapons in their own defence.

WITH
OUR
WARMEST
GREETINGS
TO

ALL OFFICERS
AND MEN OF

- ARMY
- NAVY
- AIR FORCE
- AND
- AUXILIARY ARMS



MONARCH ENGINEERING WORKS

(MONARCH AMON PULVERISERS)

Manufacturers Of :

"BESAN" PLANTS, CHEMICAL MACHINERIES, BLENDERS,
STIRRERS, INECTICIDE FORMULATING PLANTS
WITH HIGH OUT PUT AND PROFITABILITY

13, KHARWA GALLI, 6TH KUMBAARWADA, BOMBAY-4

Phones : 331652 - 333520

INTO SPACE AND BEYOND

UPPER space has been defined as the part of the universe between the celestial bodies. As far as the man on earth is concerned, outer space begins where the atmosphere ends and it extends to unknown distance . . . perhaps to infinity. According to the information now made available by space experts, the atmosphere surrounding the earth is divided into layers of varying oxygen density. The space is populated by stars, planets, moons, asteroids, meteors and comets. Despite all the space effort in the post-war years, which began with Soviet Sputnik—I and which has accomplished the conquest of moon in as much as there has been the landing of man, it has still not been established whether some of the celestial bodies support life or have living things . . . animals as well as vegetables that are strange and unknown to man on earth. Voluminous knowledge of the rarities of outer-space has now been gained. However, many times over, still remains to be gained.

Apparently, the race to space has all along been devoted and dedicated to peaceful uses. However, military minds have not failed to see military significance in the emerging and developing space-craft. Already the experts of a nuclear general war have held the opinion that a nuclear general war, if it ever came, at its best or worst could be an 'Earth War', encompassing all the medias of land, sea, air and space. Some of them have been gone to the extent of contending that the next major war will in fact be for the possession of this or that planet or the routes leading thereto. In the context of this, all fighting will be in the outer space and with satellite borne weapons. However, even those who have not gone to this extreme extent have contended that space and space weapons systems will ultimately control and dictate all nations on earth.

ASSAULT ON SPACE

As in the case of nuclear systems, so also in the matter of the conquest of space, the main effort has been concentrated in the United States of America and the Soviet Union. Both the power giants have successfully passed through the unmanned and manned flights in outer space and both have all along been claiming as the leader in the effort in its own respective way of thinking and evaluating. The crowning achievement of the US space effort hitherto has been manned landing on the moon. Further manned landings on the moon are also on schedule. However, the main US effort after this most resounding victory in the entire history of mankind has been concentrated on the development of 'Reusable Shuttle' . . . the manned space transporter system. According to US space experts, the reusable shuttle represents a truly revolutionary advance in space technology. Once operational, it will eliminate the need for costly expendable boosters for manned orbital operations and transform such operations eventually to nearly a routine and much cheaper endeavour than manned space flights has been up to now.

The Shuttle is an integral and indispensable part of NASA's complex post-Apollo earth orbital programme. The programme includes development of a long term, multipurpose, manned space station and a space 'tug' that would be used to carry crews and payloads from orbit to orbit. The logical arguments for going ahead with shuttle are clear even from national view point. An added

advantage is that it provides the first real opportunity for American-European co-operation in advanced space development. The Europeans, after years of arguing among themselves about how best to develop European space capabilities, seem to be determined to overcome their nationalism that has hitherto beset their efforts. They hope to create a multinational European NASA and they appear to be seriously interested in participating in NASA programme for the future. Unfortunately, logic does not rule politics and US politics of the day endanger the shuttle and with it the whole future of US space effort. Except for people intimately involved in or affected by the space endeavour, and the small band of Congressmen who do not want to see the huge investment of the past several years go down the drain, very few people these days seem to care about the fate of an enterprise that so recently captured the imagination of the nation and the world. Indeed the negative attitude has long since expanded to scapegoating. The segment of the politically liberal community, that has for years been attacking the space programme, has unconsciously combined with the budgeteering conservatives who are perennially hung up on the issue of 'government spending'. The unannounced leader of this unlikely alliance has been the President himself. In his effort to combat the inflatory spirit, he has adopted a mean-ex approach across the research and development abroad. A principal casualty of the Presidential policies has been the space programme. There is what some people have been calling a depression in the aerospace industry. However, they have warned and cautioned the space programme critics that, unless the Administration, the Congress and the country back the NASA programme to develop its projected manned transporter system, the reusable space shuttle, then sooner or later the US space agency will wither on what was once so rich a vine. The future of both space agency and the space programme hangs on the NASA shuttle programme. Without the shuttle and revolution in space flight that it would effect, a 'Volkswagenisation' of space operation would probably be the result. It is against this muddy background that NASA, has been doing what it can to proceed with its post-Apollo programme, the first stage of which is the already founded **skyland programme**. The skyland programme is claimed to be quite stable and moving along well technically. It will undoubtedly provide good experience in manned orbital operations for periods upto fifty six days. However, it will still have limitations because it is based on Saturn-Apollo type hardware. It will certainly not in any way be a permanent space station.

USSR POSITION:- US sources have claimed that it is round 1966 that the Soviets gave up any plans that they had to compete with the US for the laurels of first manned moon landing and opted in favour of primary attention to other near earth environments. A reasoned exposition of how the Soviets were proceeding and to what ends, was provided by a 1969 year-end round up of the Soviet situation in space. This round up was prepared by **Academician Boris Petrov**, one of the principal official spokesmen on Soviet space affairs. Petrov talked about current Soviet activities in space and future plans in terms that made it clear that, manned effort would continue unabated. However, at this stage greater concentration would be given circumterrestrial projection . . . in other words **orbiting space station projects**. Lunar and circumlunar explorations would be left for the present to automatic apparatuses. Petrov added that these, however, would by no means exclude manned flights to the moon. However, it would mean that in the present phase, primary significance would be attached to investigating moon with automatic stations.

SPACE STATIONS:—In a broadcast on May 3, 1970, a Soviet radio commentator claimed that total Soviet space programme was keyed to achieving an orbiting station. The Soviets claimed that in the near future, here in near earth space, long term manned orbital stations would be assembled and will operate. However, according to US sources, in speaking of space stations in 'near future' the Soviets were evidently looking, at that moment, towards a first generation effort that could primarily be experimental and of limited purpose and duration. For the longer terms, the Soviets were clearly aiming and working towards a far more elaborate undertaking, something on the order of **multipurpose, long-lasting 'base station' or cosmodrome in space.** But they expected to achieve that only after a succession of stages extending over the decade of the 1970s. How these stages were expected to develop, including what was in the more immediate offing, was described by Boris Petrov in an article in the October, 1970 issue of *Vestnik Akademii Nauk USSR*. He predicted that, first of all stations for a relatively narrow purpose, with a crew of three to twelve men, with a period of existence from one month to a year or slightly longer, would be put in circumterrestrial orbit . . . Well elaborated and tested compartments of space vehicles and individual stages of carrier rockets would be used as the main units of those stations. This of course would not exclude, designs intended specially for orbit stations. Such stations would be put into orbit in an assembled state by means of powerful carrier rockets or in parts, with one or two dockings. The station crew would be delivered by a transport space vehicle, with which the crews would also be exchanged. The station and the vehicle would be equipped with docking units and systems.

THE NEW NOTE:—By the end of 1970, the Soviets were striking quite a different note. A year-end review on space published in *Pravda* on December 29, 1970, and signed by **Professor A. Dmitriev**, suggested that the Soviet leadership was swinging full circle . . . back to the belief that Soviet approach was not only sound in itself but distinctly superior to that of the US. Dmitriev avoided any suggestion that the Soviets were concentrating their efforts mainly on automated operations. He asserted that, while automatic vehicles were much cheaper than manned craft, his overall picture was of a comprehensive Soviet effort encompassing across-the-board capabilities . . . manned as well as unmanned. He saw three main directions in the Soviet Union's conquest for space. **The first and the chief one was systematic research in near earth space, using automatic vehicles and manned craft; the second was the moon and circumlunar space as 'testing ground' for Soviet cosmonautics and there was research**



STEAM PIPE LINE FABRICATORS * APPROVED BOILER CONTRACTORS

130, Trimbak Parshuram Street, Bombay-4 Phone; Office & Works: 333014 : 521135

of distance planets. Soviet accomplishments, he asserted, had prepared the way for significant breakthrough in all these directions.

LEADERS STILL:- Although Soviet authorities avoided any direct comparison between theirs and US approach to orbiting stations, yet throughout the period they asserted that their country was about to achieve a quantum jump in overall capabilities, allowing it to resume unquestioned world space leadership. **M. V. Kedysh, President of the USSR Academy of Sciences,** saw the orbiting stations providing means to solve cardinal issues of physics, geophysics and astrophysics and promoting the most rational use of the wealth of earth and advanced geology, meteorology, agriculture, forestry, fishing and oceanology to new heights. According to him, orbiting stations could be used as enormous physics laboratories in cosmic space. They could be of exceptional importance for studies of the earth's atmosphere and cosmic meteorology. Cosmic meteorology in its turn could make it possible to substantially refine the forecasting of weather and play a decisive role in the solution of the extremely difficult problems of the future . . . control of weather. With regard to earth resources, completely new prospects could be opened up in the study of our own native planet. Major advance could also ensue in the field of global communications.

US MOON LANDING . . . SOVIET REACTIONS:- Authoritative Soviet comment on space after the US landing on moon were relatively sparse. However, whatever was said, told clearly of concrete Soviet purposes, plans and expectations than the enormous outpourings of the earlier years. The statements of the Soviet space experts clearly suggested that there were no plans to join the Americans. Their main aim was to create a multimanned space on the moon before the late 1970s . . . orbiting space station system and they could continue their automated exploration of moon and press on with automated planetary and interplanetary probes, with prime emphasis on Venus. However, their deep space operations would be strictly secondary to near earth effort, with no spectacular departures in deep space. Far from giving any indications of any plans for a planetary 'grand tour' during the favourable 1976-79 period, the Soviet policies appeared to be developing against the background of new emphasis on practical benefits from space. **The 1971-75 Five Year Plan** issued in February, 1971, focussed its main attention on space borne communications, meteorology, earth resources survey, geographical research and the solution of other economic tasks. In contrast to furthering scientific knowledge as the basic aim of Soviet space programme, the new emphasis was clearly tied closely to plans and expectations from the space station system.

LUNAR-16 & LUNAR-17:- Soviet answer to the US lunar accomplishment was that they were going their own way, in accordance with their concepts, based on their own experiences as the pioneering space power. They were confident that, through a succession of precisely work out stages, they would still achieve and retain long term dominance in space. Immediately after the US moon landing, the Soviet spokesmen focussed heavily on their unmanned exploits, particularly **Lunar-16 and Lunar-17.** They pictured these feats as more productive and less costly and risky than US manned efforts. While avoiding most carefully any suggestion of lack of interest or purpose in manned capabilities, they talked about balanced programme involving both manned and unmanned activities, with greater rather than lesser emphasis on the manned . . . claiming that, as against the US manned oriented, their programme was machine oriented and each was proceeding according to its own set plan. Immediately after the launching of Lunar-16 and Lunar-17 it appeared that Russians were ready to land robots at the rate of one every month, while the Americans

appeared to be ready to put a man on the moon perhaps only once a year. The difference, therefore, appeared to be ceasing to look so impressive, merely because in a very short space of time the Russians could know more about the moon and could explore more places on its surface than the Americans.

LUNOKKHOD-1: The first of the forecasted 'new types' of apparatus turned out to be **Lunokhod-1**. It landed and began its ploddings on moon surface within six weeks of Lunar-16. While Soviet comments on Lunokhod-1 were in a more general vein than comments on Lunar-16, some details were given as to the design and potential of the vehicle and as to where the Soviets expected to go in its utilisation. In a broadcast by Radio Moscow, on November 19, 1970, it was described as a multi-purpose mobile scientific laboratory with great possibilities of a studying areas of space far distant from our planet by means of automative devices. The broadcast on January 16, 1971, once again emphasised the vital importance of automatic vehicles and claimed that Lunokhod's safety margin and perfect design had surpassed all expectations. It further stressed that, at that particular stage of development of space technology, a man could not have stayed on moon for such a long time. It further argued that in the near future it would be possible to assign to automatic devices such tasks as studying automatic meteorities exploring volcanos and studying radiation in near moon space.

What was more important was that it had provided with an almost ideal means of conveyance to the moon, a means independent of super-rigorous conditions of vacuum and sharp changes of temperature. Such selenomobile could also be loaded with different scientific apparatus. Writing in January 22, 1971, issue of **Turd, Engineer, T. Borsove** asserted that the present state in the development of automatic craft had opened up prospects for the interaction of different types of 'automata' . . . What was more important was the length of lunar vehicle's active life . . . Two months of faultless performances by Lunokhod-1 was the highest appraisal of the machinery developed by Soviet designers. This experiment showed that it was possible in principle to develop moon vehicles that could operate anywhere in space. While avoiding saying in so many words, the Soviets implied that through the systematic development and use of increasingly varied and increasingly complex and sophisticated automatic devices for moon exploration, the USSR had put herself in a position to surpass the US, both in the build up of scientific knowledge about the moon and ultimately in manned activity on the moon and elsewhere in space.

In contrast to their moon-exploration efforts, Soviet planes for planetary and interplanetary explorations at this stage appeared modest. The avowed intent was to lay scientific and technological foundations for a large-scale, new-dimensional, and continuing effort, once the orbital-space-station was operational. Primary emphasis was being placed on Venus since the launching of devices toward this planet had provided extremely important information for understanding of the origin of the planets, of the solar system and of our own earth. Writing in **Sovietsky Voin** of March, 1970 **Petrov** asserted that there would be further study of the Venusian atmosphere by automatic probes and the determination of the internal structure, nature, and relief of the surface of that mysterious planet with respect to other planets and interplanetary space. Clearly, the Soviets intended beginning with Venus, to use automatic devices and vehicles being developed and utilised for moon explorations. Another outstanding achievement **Dmitriva** asserted that one of the objectives of the moon explorations would be the accumulation of the necessary experience for creating new automatic vehicles intended for the future study of Venus and Mars, Saturn and Jupiter, and the other heavenly bodies . . . And in more specific terms he argued that Lunar-16 opened up the prospect of automatic vehicles making trips to other planets and subsequently delivering research results to earth.

MILITARY SIGNIFICANCE:—

Ever since the commencement of the assault on space, the two power giants, the United States of America and the Soviet Union, have been on war footing for the conquest of planets, the routes leading thereto and material benefits available there. In a way and to an extent, therefore, it can be contended and argued that spacecraft hitherto evolved and put into orbit have been of military nature in the broadest sense of the word. After all, their sole purpose has been to establish superiority and to feed national pride with 'achievements unprecedented'. However there have been some space vehicles developed and put into space with declared and specific military purposes here on earth.

MILITARY PURPOSE SATELLITES:—The first vehicles to emerge in the strictly military context have since been the **Polar Orbiting Advance Warning and reconnaissance Satellites**. Allied to these have been the **Meteorological Satellites** capable of providing routine inspection of global health conditions, with both civil and military roles. Other types of satellites in this context have been those concerned with **navigation and communications**. The first of this type have been claimed to be particularly valuable for providing accurate fix for submarines acting as launching platforms for ballistic missiles. The second have been claimed to be specially effective for maintaining communications between military groups dispersed around the globe. Still in the passive role of military space systems have been the **Inspection Satellites** designed to track and identify unknown vehicles in orbit. Passing across the threshold to active space systems have been the **Rendezvous Satellites**. These satellites have been equipped for identification, tracking and destruction of hostile vehicles. These have been supplemented by **Anti-Satellite, missiles**. They, by themselves, may lack the performance of satellite vehicles, but they can be launched to satellite altitude and planned with accuracy in the path of the orbiting targets on an arching trajectory. Finally, there have been the space weapons already developed or in the process of development, to supplement the conventional surface launched ICBMs. Those, already developed or proposed to be developed, range from **Long Plying Ballistic Missiles** capable of spending days in space while pursuing their trajectories, to **Jump Down Satellites** and **Orbital Boost Gliders**, capable of reconnaissance and bombing missions under human control.

COMMUNICATIONS SATELLITES:—Communications satellites have since shown great peace time value. They are being relied upon for much greater value in time of war. Hitherto, the communications satellites appear to have been developed in two main categories. (a) Instantaneous Relay or Red Line Satellites. The higher these satellites are above the earth, the more of the earth they can see and thus provide greater range of the communications system. The limitations of this system are that their transmissions are susceptible to monitoring. (b) The Low Altitude Satellites (between 100 to 200 miles). These orbiting vehicles are also called message repeaters, because they repeat the signals sent to them by transmitting with radios carried aboard the satellites. The traffic handling capacity of this system has been found enormous. They can also be made to have highly selective 'whom to serve and when' capability. The major benefits accruing from the communications satellites (Cosmats) has been international television. However, impressive, as have been the benefits to date, they have barely scraped the surface of the lod. Already, in hardware

development are new types of satellites that offer exciting potential for the near future. **Synchronous Satellites:-** These type of spacecraft have a special utility in practical applications. Their movements in space are synchronised with the earth rotation. They are directed into the orbit 200 to 300 miles high. At that altitude their requisite speed is such that they remain stationary with respect to a point on the earth's surface. From this lofty perch, a single satellite can see approximately forty per cent of the earth. Three of them can cover the entire globe with considerable overlap. **Broadcasting Satellites:-** From the standpoint of general benefit to the world, in time of peace and to the belligerents in time of war, the most important project in space communication field has been the new type of cosmat called the Broadcasting satellites. In them is installed a system that can send signals directly to a home TV set or a community antenna, by passing the intervening complex of ground facilities needed by the point-to-point cosmat. A distinguishing point in these satellites is that the satellite itself, rather than the ground station, has the prime power source. This is accomplished by equipping the spacecraft with nuclear power, huge batteries, fuel cells, or with enormous, 'sollar arrays' . . . banks of thousands of cells that draw energy directly from the sun. **Navigation and Traffic Control Satellites:-** (NAVASAT). This is another area in which the satellites, have offered great promise in precision navigation and traffic control for aircraft and surface vessels. Ever since 1964, the US Navy (the same day may be the case with the Soviet Navy) has been demonstrating the utility of the (NAVASAT) with an operational system used to pinpoint the location of the fleet ballistic missile submarines. Before the advent NAVSAT, the US Navy frequently experienced navigational errors of two to three miles in good weather and as much as fifty miles in had weaheer. The network of navigational satellites has made possible position 'fixes' with errors as small as the length of the submarine. As at present, the Navy NAVASAT is orientated to the position determination for the individual boat, rather than surveillance of a large number of craft. However, the development of a combined navigation traffic control system, both for ships and aircraft has been underway. **Weather Satellites:-** Even earlier, the weather satellites system in service with the **Environmental Science Service Administration** of the US had proved its outstanding value. However, a major further break through has since been registered with NIMBUS-III. This has been made possible by the instrument system called SIRS (Satellite Infrared Spectrometer). It has pioneered what is now known as 'vertical sounding' in which highly sophisticated sensors in the satellite measure the various conditions in the atmosphere that contribute to changes in weather. These sensors, coupled with other metasat technological advances and concomitant improvements in the ground based analysis system, now hold the key to accurate weather predications two weeks or more in advance. **Intelligence Satellites:-** Another extremely valuable contribution of the satellites has been found in the field of intelligence gathering. This type of satellites can perform reconnaissance of the earth below or the earth orbital space. They can also provide early warning of inter-continental missile attack. Photographic reconnaissance satellites have shown the greatest value for military purposes. **Mapping and Meteorological Satellites:-** These are also a sort of information gathering satellites. These satellites can be extremely effective in the locations of widely separated targets without error. These satellites can be used in mapping in either of the two ways . . . photographs of the known and unknown points on the same photograph, thus tying them together and track a satellite from two widely separated points. The most important use of these satellites is that of obtaining world wide information of cloud cover.

Prospectation or Earth Resources Satellites:- Perhaps, the greatest potential for realising hard economic returns from the application spacecraft has been found in the earth resources surveys, or keeping satellite watch on globe's natural resources with the aim of 'managing better' the nature's bounty. Like the advance weather satellites, the Earth Resources Survey Spacecraft reap their harvest benefits by means of remote control sensing devices. They have the potentialities of being put to several military purpose surveys. **Distant Early Warning Satellites:-** In 1959, the proposal was made in the US that satellites could be used for the detection of strategic missiles immediately after their launch or during the very early stages of their flight. There were some initial difficulties in the development of the project. However, latest reports suggest that IR and UV detectors have been successfully developed and they are already in use in the Multimission Satellite Programme N. 949. **Nuclear Explosion Detection Satellites:-** The main function of this type of satellites is the detection of nuclear explosion in the upper atmosphere. They have been in use both in the US and the Soviet Union and their achievements have been considered 'very significant' from military point of view. **The Long Plying Missiles:-** This type of missiles have their inspiration, at least in the US, from the early unsuccessful attempts to send probing rockets to moon. Developed in a military role, they are claimed to have proved the supreme weapons system of the cold war manoeuvre. If embodied in a thermo-nuclear warhead, they are claimed to have the capabilities of being launched into the space, perhaps 48 hours before they are designed to re-enter and air burst over specified targets. **Satellite Bomber:-** The possibilities of satellites as bombers have been examined and explored. Further explorations on the effort has all along been continuing. Such a weapon system, as and when developed, will introduce revolutionary change in the nature and character of war and pose new threat inasmuch as it will give a number of advantages to the attacker. The most obvious would be the ability to attack from vantage point difficult to reach by defence. As at present, there appear to be no means to prevent a satellite doing whatever it may want to do. Chances are that, in the foreseeable future, space offensive will be ahead of defence by the exploitation of increasing altitude, speed and manoeuvrability and electronic counter measures. A satellite bomber force would launch its space vehicles deliberately and leisurely in time of peace. It will take full advantage of the most efficient propulsion and guidance systems, ideal weather and optimum launching sites without concern for enemy counter measures. The crew, if one were required, would be replaced at regular intervals without returning the satellite bomber to earth by the use of small earth space and return taxi. In bombing, it will take full advantages of radar, infra-red or line

INTERNATIONAL IMPEX CORPN.

APPROVED GOVT. SUPPLIERS

STOCKISTS & WHOLESALEERS OF GENUINE SPARE PARTS FOR :

TATA ● JEEP ● DODGE ● LEYLAND ● BEDFORD

ALSO SPARES FOR EARTHMOVING EQUIPS ; TRACTORS & DUMPERS.

16, KILN LANE, LAMINGTON ROAD A, BOMBAY-7 WB

PHONE : 3 5 1 7 1 7

GRAMS "BENZPARTS"

of sight methods of guidance. Even moving targets, if distinguishable, would be attacked. However, it cannot be ignored or overlooked that, whatever the advantages, real or imaginary of the satellite bomber, the process is not without hazards. Major difficulties in this regard are that satellites cannot be regarded as a simple extension of the bomber. It has to be conceded that objects cannot be dropped from the satellites. They have to be forcibly ejected by retro-rockets fired in the opposite direction to the satellites position and at a sufficiently downward angle to ensure that they re-enter the earth's surface. Further, bomb capsules can never be effective substitutes for onventional surface to surface to ICBMs. It is because, unlike the latter, the former cannot be launched against particular surface targets. They can only be cut down in the target when the satellites are in certain relationship. The only orbit in which a satellite can be guaranteed to pass over the same spot on earth, with each successive rotation, is the equator. This would rather seriously limit the military potential of the satellite bomber. Apart and aside of this, it has to be borne in mind that jump down bombs are particularly vulnerable to counter measures. For instance it is entirely possible to trigger the retro-rocket prematurely or frustrate the vehicles orientation system by spurious commands, if this were not automatic. And of course, such vehicles might be destroyed in orbit by counter launched missiles before they could actually be used. Finally, if satellites are used as jump down bombers, they will not involve just a few such weapons but many. Apart from the inherent weaknes of the fixed orbit jump down weapons, there would be many other obvious difficulties in making sure that they function reliably. The use of orbital decoys, along with the actual weapons, would further help confuse the picture from the defence point of view.

**AT YOUR SERVICE, SIR, SINCE 1934
FOR QUALITY AND SATISFACTION**

WE ARE AUTHORISED STOCKISTS OF:-

HINDUSTAN FERODO LTD.,

Turners, Firefly & Permanite, Jointings & Packings.

"GG" Steam Valves & Boiler Fittings with I.B.R. Certificate.

SOLE DISTRIBUTORS OF:-

"Ajanta" Brand Glass and Rubbere Lined Diaphragm Valves & Spare Diaphragms, Valco Brand M.S. Union Brass Seated.

DISTRIBUTORS OF:-

"Universal" Brand Pressure & Vacuum Gauges. Indoflex Private Ltd. for galvanised flexible pipes for oil and steam.

STOCKISTS OF:-

'TIC' Tata Make Pipes & Tubes. Kirloskar brand C.I. sluice & reflux valves and cast steel valves.

PLEASE

CONTACT :

R. OCHHAVLAL & CO.

86, Nagdevi Street, Bombay-3 BR.

Tel. Shop: 321114. Resi: 351654: 360649.

Grams: "VALVES".

WITH OUR WARMEST

GREETINGS TO



ALL OFFICERS AND MEN OF
OUR GALLANT ARMED FORCES
WHO
HAVE ENDEARED THEMSELVES
TO PEOPLES ALL OVER THE WORLD
AS THE STOUTEST DEFENDERS OF
FREEDOM, SECULARITY AND SOCIALISM



SCIENTISTS NEED
ACCURACY AND
ACCURACY MEANS...

CORNING BRAND

THE ONLY TRUSTED NAME IN
SCIENTIFIC AND LABORATORY
GLASSWARE.

MANUFACTURED BY:
**BOROSIL GLASS
WORKS LIMITED**
BOMBAY

AVAILABLE FROM
**HIRJI & CO.
PVT. LTD.**

106 TANTANPURA ST
BOMBAY-9
PHONE 32-5567





**TWENTY FIVE
YEARS OF**

INDIAN

ARMED

FORCES

IN COMMEMORATING TWENTY-FIVE YEARS OF SERVICE RENDERED BY OUR ARMED FORCES, WE LOOK BACK WITH INTENSE PRIDE ON THE PATH TRAVERSED, RECALLING THE GREAT ACHIEVEMENTS IN THE FIELD OF NATIONAL INTEGRATION, DEFENCE AGAINST EXTERNAL MILITARY AGGRESSIONS AND IN THE CAUSE OF WORLD PEACE UNDER THE BANNER OF THE UNITED NATIONS. IT IS NOT WITHOUT REASON THAT HUNDREDS OF OUR SOLDIER SONS HAVE EARNED THE HIGHEST NATIONAL AND INTERNATIONAL AWARDS FOR DISPLAYING MIRACLES OF COURAGE AND VALOUR..... IT IS NOT WITHOUT REASON THAT OUR ARMED FORCES STAND IN GREAT GLORY IN OUR ENTIRE NATIONAL HISTORY BY WINNING FOR THE FIRST EVER CHIEF OF THE ARMY STAFF THE RANK OF FIELD MARSHAL.



**TWENTY FIVE
YEARS OF**

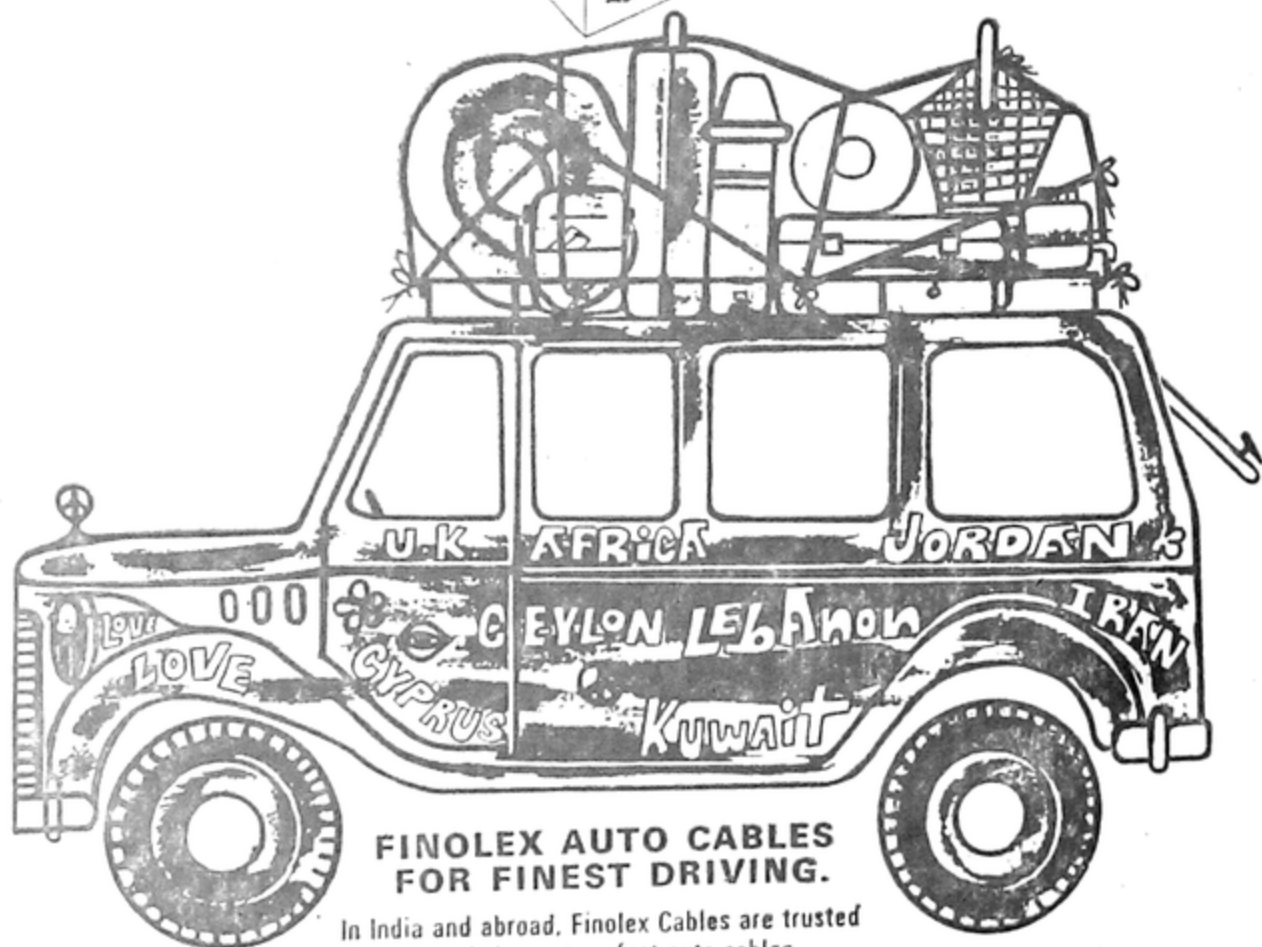
INDIAN

ARMED

FORCES

IN COMMEMORATING TWENTY-FIVE YEARS OF SERVICE RENDERED BY OUR ARMED FORCES, WE LOOK BACK WITH INTENSE PRIDE ON THE PATH TRAVERSED, RECALLING THE GREAT ACHIEVEMENTS IN THE FIELD OF NATIONAL INTEGRATION, DEFENCE AGAINST EXTERNAL MILITARY AGGRESSIONS AND IN THE CAUSE OF WORLD PEACE UNDER THE BANNER OF THE UNITED NATIONS. IT IS NOT WITHOUT REASON THAT HUNDREDS OF OUR SOLDIER SONS HAVE EARNED THE HIGHEST NATIONAL AND INTERNATIONAL AWARDS FOR DISPLAYING MIRACLES OF COURAGE AND VALOUR IT IS NOT WITHOUT REASON THAT OUR ARMED FORCES STAND IN GREATEST GLORY IN OUR ENTIRE NATIONAL HISTORY BY WINNING FOR THE FIRST EVER CHIEF OF THE ARMY STAFF THE RANK OF FIELD MARSHAL.

Wherever you go..... you go with
Finolex



In India and abroad, Finolex Cables are trusted
for their most perfect auto cables.



Sole Selling Agents

INDIAN CABLE INDUSTRIES, Bombay-Poona Road, Pimpri, Poona-18. Tel: 8743/4 '5.
FINOLEX SALES CORPORATION, Mani Mahal, Mathew Road, Opera House, Bombay-4 (BR). Tel: 266795.

CHAPTER XII

INDIAN ARMED FORCES

TWENTY FIVE YEARS OF SOLDIERING FOR NATIONAL FREEDOM HONOUR AND INTEGRITY

BORN at the hands of East Company as a Sepoy Army, Indian Armed Forces ultimately matured into ARMY IN INDIA. Despite the handicap of operating under a foreign flag and for foreign interests, they played distinguishing role in World War I and scores of minor campaigns before and after the war. During World War II, they further enhanced their standard of field performance and they earned the proudest ever tribute of being the "Greatest Warrior Force ever created". The tribute was paid to them by Field Marshal Wavell, one of the hardest task masters in the British Imperial Forces.

Immediately after the close of World War II, there was robust faith and confidence among all politico-military experts that, once India was free and Indian Armed Forces were assigned the task of defending their own national freedom, honour and integrity, their performance would beat down their own records set up earlier, by many times over. However, it was not in the wildest imagination of any politico-military experts that in the wake of freedom will also come the break-up of the ancient and historic land into INDIA and PAKISTAN . . . that the 'body of splendid warriors' will also be cut up into two and positioned against one and another as hostile forces. This, however, happened.

Under the circumstances, therefore, it is that part of this 'splendid body of warriors' that came to FREE INDIA's share after the tragic partition that formed the nucleus of reborn INDIAN ARMED FORCES. It is they who were charged with the task of defending the hard won prize of national freedom. Here is the story of their heroic actions which began with the first operations in JAMMU and KASHMIR, within a few months of the dawn of freedom, and which has just added to its glory and renown covered history, the honour and distinction of the epoch-making battle for BANGLADESH . . . THE FOURTEEN DAYS OF CROWNING GLORY have ranked the Indian Armed Forces among the finest in the world and are ideally poised to serve an example to be emulated by liberated armies in other countries.

● **ATTENTION**

HOSPITALS - DOCTORS

We are actual and Leading manufacturers
of the following Equipments since 1947.

● **Sterilizing Equipments.**

1. Bulk Sterilizer.
2. Horizontal (Vacuum) Sterilizer.
3. Vertical Sterilizer.
4. Instrument Sterilizer.
5. Hot & Cold Water Sterilizer.

● **Operating Tables.**

1. Head-End Control Table.
2. Deluxe all position Table.
3. Children Table.
4. Orthopaedic Table Albee's Type
5. Orthopaedic Table Hawley Type.
6. Orthopaedic Table Watson Jones.

● **Laboratory Equipments.**

1. Laboratory Ovens.
2. Laboratory Autoclaves.
3. Laboratory Incubators.
4. Laboratory V. D. R. L. Rotator.

● **Hospital Furniture.**

1. Fowler Bed.
2. Labour Bed.
3. Ward Lockers.
4. Cots with cradle.

MSCO PRIVATE LIMITED.

Prop : National Surgical Instrument Company.

301, Dr. E. Moses Road, Worli Naka, BOMBAY 18.

Gram : 'WORKWELL' (Bombay)

Tel: 373370

WAR TIME SCENE:- On the eve of the outbreak of World War II, the total strength of the **ARMY IN INDIA** stood at 15,900. British, 18,700 Gurkhas and 1,25,800 Indians. Indians were drawn from all sections of the community. Whatever, the numerical strength, there were only a handful of Indian officers, even at the junior level. For all practical purposes, therefore, **ARMY IN INDIA** was a fighting machine having no say in command, decision, strategy and tactics.

Immediately after the outbreak of war, however, the Authority in India, in conjunction with the Authority in Great Britain, embarked upon a phased programme of expansion and build up of all the three **SERVICES** and locating in India as much of defence production as could be possible under the circumstances. The expansion of Army was undertaken under **PLAN-A**. As a result of the concentrated effort made, the manpower strength of the Army, in January, 1944 stood at 12,62,150 men. The expansion of the Royal Indian Navy, which hardly existed before the outbreak of the war, was not undertaken on any set plan basis. The British were still reigning supreme on the high seas and it was not visualised that Royal Indian Navy will have to undertake, any serious wartime tasks. However, despite all this, the borne strength of the Indian Navy at the close of the war stood at 27,651 officers and sailors manning six modern sloops, four corvettes, twenty-one mine sweepers and several auxiliaries. In the case of the Air Force, the expansion was carried out in three distinct stages. The first stage (from September, 1939 to February, 1942) represented the period when equipment was the chief limiting factor. The second stage (from February, 1942 to January, 1944) represented the period of all out expansion and the third stage (from February, 1944 to September, 1945) represented the period of consolidation. At the close of war, the borne strength of the Royal Indian Air Force stood at 52,854 officers and airmen. As at the same time, the Authority in India claimed that this manpower, trained and equipped and having a larger proportion of officers than it could even be visualised at the outbreak of the war, had served in many regions and in various theatres, proving themselves second to none in the world. During the course of the fighting, they bravely and cheerfully suffered all inevitable and inescapable casualties, hardships, miseries and privations, earned the highest war decorations and above all, earned the tribute of being the '**Greatest Warrior, Force ever created**' paid by **Field Marshal Wavell**, one of the hardest task masters in the entire **British Armed Forces**.

THE POLITICAL TRENDS:- The war years in India had witnessed the rapid build up of the armed forces. Their splendid performance on the fields of battle had been recognised even by the enemy. The war years in India had also witnessed a very rapid march of the Indian people towards their ultimate goal of national freedom. Even before the war had ended in Europe, the leaders of **Indian National Congress**, the main political party committed to the War of National Independence had proudly proclaimed their robust faith and confidence that the ship of national liberty had victoriously survived all storms and hostile assaults . . . had covered its chequered and eventful journey . . . and was nearing ashore. Unfortunately, the war years had also witnessed a menacing growth and development of fissiparous and disintegrating tendencies and forces. Despite all the efforts to the contrary by the Indian National Congress, the **All India Muslim League**, claiming to represent the entire Indian Muslim community, a separate nation in its own right, had proclaimed **Pakistan** . . . the homeland for Indian Muslims, as its ultimate goal. The League had declared

unequivocally that it would be party to no talks, no negotiations, no parleys with either the ruling authority, or with any other political party unless the fact of Pakistan was recognised. If the extent and intensity of the communal riots ravaging the entire length and breadth of the country, or the persistent and mounting threats thereof, could be any index, a state of regular and, perhaps, unending civil war could not be ruled out. And then All India Muslim League was not alone in the field of communal warfare. There were the Sikhs under the leadership of Akali Party threatening to fight for Khalistan . . . their own homeland in the land of five rivers . . . the Punjab. The virus was also moving into the body politic of several other so called ethnic groups. However, unpleasant and unpalatable it was to those who had suffered and sacrificed for the sacred cause of undivided, free and democratic India, the future prospects were not bright. The peace prospects even in a divided India were also not bright because All India Muslim League was in no mood to accept and remain contented with what it would possibly get out of the partition, if it ever came about.

IMAGINARY PAKISTAN:- During the war years, the creation of PAKISTAN as the future homeland of the Indian Muslims, had been discussed and debated at scores of mass and thousands of street corner meetings. It had also filled the pages of the national press. However, there had not emerged any definite and positive definition of PAKISTAN . . . its territorial extent, scope and jurisdiction and the composition of its society. It was only, the general impression at the mass level that Pakistan, if it ever came into existence, would be an Islamic state, would cover the so-called Muslim majority areas and would absorb the entire Muslim population. However, the political parties, including All India Muslim League, had not given out their mind on the subject . . . even to the possibilities of such a situation arising, particularly when it would involve a massive migration of millions of people across the new frontiers. The question of ARMED FORCES for the new countries, was perhaps, the most difficult, delicate and ticklish. After all they had to be carved out of the existing body of the Armed Forces. There had been no public discussion on this subject in any of the meetings held to discuss the possibilities of Pakistan coming into existence.

RETURN OF WAR VETERANS:- Despite the fact that British Indian Armed Forces had covered themselves with matchless and undying renown and glory, they were not the favourites of any political party in India . . . they were certainly not the darlings of Indian masses. Throughout the war, they were run down as hirelings, mercenaries, stooges of imperialists and enemies of national freedom. All political parties were agreed that once the war was over, and the soldiers returned home, they would be utilised by the British ruling authority to crush and kill the struggle for national freedom. Very naturally, therefore, when the soldier sons did return home, they were not received by the people with any love, affection, respect and regard generally shown to war heroes. The cold and chilly behaviour of the political parties was clearly demonstrative of the fact that Indian Armed Forces were still considered an integral part of the British imperialist war machines . . . and the authority to whom they had served could alone have any warmth of feelings for them. As far as the Indian political parties and the Indian people were concerned, the soldiers appeared to have no alternative to moving into oblivion and obscurity.

INDIAN NATIONAL ARMY:- During the war years, a very significant development had taken place even vis-a-vis the armed forces. **Netaji Subhas Chandra Bose**, the stormiest petrel of Indian National Congress and the bitterest enemy of British ruling authority in India, had escaped from the country. He first reappeared in Germany where he made the first beginning of Indian National Army. It was reported to have been raised to one division strength. However, this force was never reported to have joined the war operations launched by Germany. During the war years, Netaji moved from Germany to Singapore where the foundations of Indian National Army had already been laid by Captain (who had promoted himself to the rank of a General) Mohan Singh. With the arrival of Netaji, the **Provisional Azad Hind Government** was formed. The Indian National Army swelled in man power, drawn mainly from Indian prisoners of war in Japanese hands. It acquired the material equipment and moved into the theatre of war as a regular liberation army. Despite the fact that it was never equal to the British Indian Armed Forces, either in the matter of manpower, military hardware or in command and directional capabilities, it fought some of the most historic unequal actions and demonstrated morale of the highest order.

During the war years, Netaji and his Indian National Army had hardly figured in the talks and pronouncements of any political party in India. However, British broadcasts during this period referred to Indian National Army as **JIFS (Japanese inspired forces)** or **HIFS (Hindu inspired forces)**. These broadcasts claimed that the so-called Indian National Army had come into existence at the instance of the Japanese, it will live with the Japanese and will ultimately go the way that the Japanese were destined to go . . . suffer an utter and absolute defeat and extinction. These broadcasts claimed that although the Indian National Army had been able to temper with the loyalty of those who had surrendered to the Japanese and become prisoners of war, it could not and would not in any way adversely affect the conduct of war. In his memorandum to the British Prime Minister attending the **Trident Conference in Washington**, **Mr. Amery, Secretary of State for India**, said:

"For some months it had been becoming plain that great efforts were being made by the Japanese to undermine the morale and loyalty of the Indian Army. Japanese had set up a school at Penang for training Indian nationals as agents, who, on completing their training, were to be sent to India to create internal unrest and promote sabotage. They had formed an Indian National Army (INA) from Indian prisoners-of-war and Indian civilian residents in Malaya and Burma. They were giving assistance to an organisation styled as the Indian Independence League (I.I.L.) which had been formed round a nucleus of certain notorious political absconders who, for many years, had found refuge and support in Japan and else where. Both these organisations were given opportunities to broadcast subversive propaganda to India."

The account of the INA in the British Official War History published after the close of the war ran as under: "The Japanese had formed an Indian National League and an Indian National Army. An aggressive policy towards India, based upon these two organisations, had been adopted as early as August 1942, in the hope of so strengthening the anti-British independence movement in India that the British would find it impossible to use it as a base for operations. At the same time, Subhas Chandra Bose, who had, at one time, been the President of the Congress Party in India and who was conducting the movement from Berlin, was invited to return to Asia. He travelled to Penang by submarine and from there, by air to Tokyo, where he arrived in May 1943. The

TWO MILLION JOBS THROUGH KHADI AND VILLAGE INDUSTRIES

- ** Khadi and village industries in the country provide full and part time employment to two million people
- ** Rs. 103.62 crores worth of goods produced in this sector—Rs. 25.64 crores in khadi and Rs. 77.98 crores in village industries
- ** Rs. 27.14 crores distributed as wages
- ** The programme is spread in 1.25 lakhs villages all over the country
- ** Khadi worth Rs. 5.28 lakhs exported to U.S.A., Canada, France, Germany and U.K.

KHADI AND VILLAGE INDUSTRIES COMMISSION

BOMBAY-56.

WITH BEST COMPLIMENTS

From

MOHANLAL HARJIVANDAS

**IRON MARKET - CARNAC BUNDER,
BOMBAY-9.**

REGISTERED STOCKISTS OF IRON AND STEEL

Grams: 'VEENADHARI'

Phones : { **Res : 369783**
Office : 321734

Japanese Government agreed to give him every possible support in his effort to build up a strong movement directed against India. On 1st July, Bose went to Singapore where he established a Provisional Government of Free India, with himself as its head and appointed himself the Commander-in-Chief of the Indian National Army. Encouraged by his presence, the Indian independence movement throughout the Far East at once gathered strength and Bose urged that the Japanese Army in Burma should launch an invasion of India supported by the units of Indian National Army".

However, immediately after the war, and despite the fact of their defeat on the field of battle, return home as prisoners of war, the personnel of Indian National Army were the most popular and most acceptable political currency and most ennobling and inspiring political theme. Their arrival in the country, their trials at the Red Fort, their presence in public meetings, demonstrations and other forms of political struggle, electrified the entire country and generated new enthusiasm which could not but kill the British ruling authority. The extent and intensity of the new spirit was demonstrated in the mutiny of Indian Naval personnel in Bombay waters. On all accounts, the personnel of the Indian National Army were regarded as the nucleus of the Free Indian Armed Forces, and when they would come into existence. This, however, was not to come out true and it did not come out true.

TRUNCATED INDIA AND PAKISTAN:- It was on August 14, 1947, that the British ultimately surrendered their ruling power and India became free and unfettered. However, India was no longer that country that it had been for several centuries and it was not the freedom that the people had fought for under the leadership of Indian National Congress. Effective from the very hour of the dawn of freedom, India that she had been, was cut up in two. From the limb and bone what was India, was carved the new state of **Pakistan . . . the so-called homeland of Indian Muslims . . . the ultimate dream of the All India Muslim League.** The territories of the new problematic Islamic State covered a part province of Punjab, and whole of Sind and Frontier in the north and a part of Bengal in the East. Bengali Muslims had of course been in the forefront of the struggle for Pakistan. But that had not been the case with the provinces in the north. However, they became the seat and source of all strength to the new state. Pakistan could certainly claim to be yet another Muslim country. It certainly was not the homeland of Indian Muslims. It certainly was not a vindication of the two nation theory propounded and elaborated by the All India Muslim League. It did not absorb all the erstwhile Indian Muslim population. In India the situation was still more complicated. Despite the birth of Pakistan, a large chunk of Muslim population was still left in India. In view of the fact that a vast majority were those who had been in the forefront of the struggle for Pakistan, there were wide-spread doubts in the country that the left over Muslim population would not toe the line of Indian national reconstruction and regeneration on secular and democratic lines. In Pakistan there were high hopes that this Muslim community would be a pawn in their hands and a powerful instrument for their aggressive expansionist and subversive designs. The two wings of the new Islamic State were separated by over one thousand miles of Indian territory. They were also separated by over three thousand sea miles around the coast. **Quaid-e-Azam Mohomed Ali Jinnah** took over as the first Governor General of the new state. Unfortunately he did not live long and could not give out his mind as to how he would forge internal unity and cohesion and provide a trouble free administrative machinery and defensive capabilities. As against this, Indian territory was still continuous,

although it needed fresh fortifications, fresh deployment of the armed forces and fresh build up of lines of supply and communication particularly all along the frontiers of the two wings of Pakistan. The extent and magnitude of this task was not fully realised immediately.

FATE OF THE ARMED FORCES:- On the eve of freedom, the total manpower strength of Indian Armed Forces stood at well above two millions. They were the largest and the most combat tested fighting machine on the Asian and African continents. They were mixed in personnel, having been drawn from all sections of the Indian community. Their greatest asset even at this stage was that they were completely untouched and unaffected by the communal virus. They were still well knit force, having all the ingredients of internal cohesion and firm discipline. They had also filled up the gaps in the officer cadre to a very large extent. Their war-time performance had demonstrated clearly and categorically that they were very much in a position to assume all positions of command and decision and conduct the war in defence of national, freedom, honour and integrity, if any was imposed on them, on their own. Unfortunately, they were no longer in a position to escape their own break-up, cross over to the new sovereignties and face each other as hostile forces. A contemporary commentator described the painful, agonising and heart-breaking process thus;

“The last and, perhaps, the most exciting task that fell to the Armed Forces was in the throes of their own dissolution. A great majority of the regiments and battalions were composed of different classes of Indian population, recruited from all over the new States of Pakistan and India. Under the partition settlement, they were allotted to one or the other country. They were called upon to render the heart-rending business of sending away Muslim and non-Muslim squadrons and companies to units, perhaps, half way across the subcontinent and similarly receive personnel from the other end. The operation was fraught with grave consequences. Mass killings were going on at the civilian level. Whole families, some millions of them, were displaced and were moving across the new frontiers in the most destitute conditions known to world history. Fantastic rumours were rife. The worst of it was that there were few, if any, units that were not exposed to the dangers that had beset the political scene”.

Earlier, the taunt had been levelled that the bulk of the armed forces had not been recruited from the politically conscious classes. However, this alone emerged as a blessing in disguise. In those troubled days, it would have needed no more than a handful of politically conscious officers, or even other ranks, to spark the powder and plunge the two newly countries into shooting war that would have reduced to mere insignificance the entire fighting and massacre in the wake of the Great Mutiny of 1857. It would also have similarly dwarfed what was at that time happening at the civilian level. It must redound to the eternal credit of the personnel of the armed force and the soundness of the recruiting, training and indoctrination policies, that all officers and other ranks accepted the fact of change in the most disciplined manner and accomplished the seemingly, impossible task of reconstituting themselves and placing themselves under the new sovereignties. They set examples of restraint, matchless and unbeaten in excellence. They remained calm and disciplined even in the face of grave provocations, comparable to which had not been known to earlier history of any country in the world. They moved across, without permitting their minds to be prejudiced and provoked by the ghastly scenes. They moved and they accepted their new positions. They defied and defeated the prophets

of doom who had predicted that such a breakup would inevitably mix up with the movements, murder and molestation of political refugees and tensions so generated would plunge the two new countries into a shooting war of total mutual destruction.

BASIS OF PARTITION:- Right upto the fateful day of partition, the basis of sharing the military personnel, military hardware and military establishments and installation or the assets thereof, had not been made public. However, as the process developed, it became clear beyond doubt that it was not the 'touch of magic wand' but well thought out and well charted plan at work. It appeared that the Supreme Command and the Commanding Officers of the Armed Forces, who were still British in both the countries, were charged with the responsibility of seeing the entire process through to its logical conclusions. Immediately after the partition, there appeared on the scene the 'Partition Council'. The Partition Council consisted of political leaders of both the countries with Lord Mountbatten, as the Chairman. The Council was assisted by a Steering Committee which further appointed ten Expert Committees of officials. These Expert Committees covered the entire field of administration. An Arbitral Tribunal was set up to settle the matters in dispute. The division of the Armed Forces and stores was entrusted to the Joint Defence Council, with Lord Mountbatten as the Chairman. The actual division was to be carried out by the Supreme Commander, Field Marshal Sir Claude Auchinleck. The Partition Council, so constituted, took the following momentous decisions and set up the necessary machinery for their planned and phased implementation.

(a) Pakistan and India to immediately have under their respective operational control, forces based and located in their respective territories and then facilitate by all possible means, the movement of predominantly Muslim and non-Muslim Units across the new frontiers as per their assignment under the Partition Plan. (b) The moveable military stores and equipment, such as vehicles, guns, tanks, etc. also to pass under similar operational control and divided between the two countries in proportion to their respective authorised strength. Pakistan's share of military stores was fixed at one-third of the stock held in Pakistan or India on the date of partition, or one-third of the maintenance and reserve requirements of the two countries on an agreed basis, whichever was less. (c) No mention was made of the training establishments etc. However, it was decided that no physical division of the Ordnance Factories, all of which fell on the Indian side, would take place. India will take full liability of their book value and make available to Pakistan a sum of six crores of rupees to be drawn as and when required by way of assistance towards setting up of her own ordnance factories and few other essential institutions like the Security Printing Press.

The decisions so taken in regard to the personnel were later implemented in two stages. The first stage comprised, more or less, rough and ready division of the existing forces on communal basis followed by an immediate movement into Pakistan of the exclusively Muslim units based in India and of the exclusive non-Muslim units based in Pakistan. The second stage consisted of combing out of the units themselves on the basis of voluntary transfers. This option was, however, not given to the Muslim personnel in Pakistan and the non-Muslim personnel in India. The division of Navy was made on common-sense lines, in as much as it was based on the actual needs of the two countries concerned, rather than on any exact arithmetical split up. A middle course was adopted in the case of the Air Force. Gurkha units, some ten of them,

were not taken into active consideration, while elaborating and implementing the Partition Plan. By an interim agreement between India, Nepal and U.K., six of them were transferred to the Indian Army and four to the British Army. At the time of partition, there were four British battalions stationed in India. As a corollary to the end of the British rule in India, they were required to be withdrawn to the Home country in stages. Next to the partition of the Armed Forces personnel on communal basis, and military hardware on agreed basis, the most difficult and delicate task was the presence of the British officers, some ten thousand of them, and occupying all the key directional positions in both the new armies. In India, they were all required to be withdrawn and replaced by suitable Indian officer cadre.

ANGRY AND INDIGNANT PAKISTAN:- It was the general impression in India that partition Plan had worked very much to the advantage of Pakistan. This, however, was not the impression given by Pakistan. On the contrary, the leaders of Pakistan were angry and indignant over the so-called partiality shown to India. Pakistan leadership complained bitterly that because it was in the interest of India to obstruct the work of the Partition Council and its subordinate organisations, Indian leaders lost no time in questioning the impartiality of the Supreme Command. Despite the protests of Lord Mountbatten, Indian leaders insisted that Supreme Command must end at once. Meanwhile the Supreme Commander had also represented to the Joint Defence Council that it was not possible for him and his officers to discharge their task in the absence of the necessary spirit of good will and co-operation between the principal parties. The matter was referred to His Majesty's Government which felt that it had no option but to close down the Supreme Command. **According to Pakistan, the way for India's functioning to her own advantages were clear.** Further, Pakistan complained that there was no cent percent Muslim Unit in the old Indian Army. Therefore, Pakistan had no army to start with. India on the other hand, immediately got 'class' units which were composed of Hindu clans, such as the **Dogras, Marathas and Sikhs**. All the administrative units were located in Indian territory. India, therefore, had the framework and had only to fill the gaps. Pakistan got only bits of units, which were mostly stationed in the Far East and Middle East and took quite a lot of time to get back home. All the ordnance factories and most of the arsenals were also located in India. Pakistan, therefore, was extremely short of ammunition. Out of its share of 163,000 tons of military stores, Pakistan received only 30,000 tons, most of which lay in Pakistani territory. In October, 1947, there was hardly a single formed unit in Pakistan. Several units still had Hindu and Sikh commanding officers. Hindus still held appointments at Pakistan General Headquarters. A Madras and a Gurkha units were still in Pakistan as late as the middle of December, 1947 and small sub-units were still in Kohat and Bannu in the beginning of 1948.

MILITARY EFFECTS OF PARTITION:- With immediate effect, the fact of partition changed most radically the existing contours of defence problems of both the countries. It also introduced several new problems, the most important of which was the declared trend of actual and potential hostility of Pakistan. It appeared to be the very corner stone of Pakistani home and foreign policies. The broken and truncated armed forces which were inherited by both the countries did not appear capable of taking up these responsibilities and discharging them to the absolute protection of the prize of national freedom that had been after such a long and winding struggle. It, therefore, became a matter of supreme importance for both the countries to re-examine, re-

assess and re-valuate the existing, emerging and developing problems of defence and security and the task of building up armed forces and supporting elements to take up and effectively discharge all the responsibilities.

PAKISTANI VERSION:- According to the top leadership in the new Islamic State, Pakistan inherited all the burden of external land defence of United India. This mainly meant the defence of the North-West Frontier where was normally stationed about eighty percent of the erstwhile Indian Army. However, Pakistan deliberately overlooked the fact that the very context of defence in the region had changed. Tribesmen in the region, numbering about four millions, were all Muslims. According to Pakistan, Islam had been a great unifying force, despite several attempts of subversion by others. Pakistan, therefore, had no reason to doubt that hoary martial Pathans would be similarly motivated. Pakistan had common frontiers with Burma, India, Afghanistan and Iran and was very close to the Soviet Union and China. In the South East of Pakistan was the Bay of Bengal and in South West was the Arabian Sea. To ensure its security, Pakistan had to be ready to withstand aggression from any quarters, local or global. However, Pakistan made no secret of the fact that her real problems of defence were only those posed by India which had not and which would never reconcile herself to the enduring entity of Pakistan. According to Pakistan, India, in this context enjoyed distinct and positive advantages. In the first instance India was a huge land block which cut Pakistan into two parts. India had an area of 1,269,640 square miles and a population of 356,891,624, about four times larger than Pakistan in both respects. Indian Armed Forces were also larger in size. Indian industrial potential, military and non-military, was ten times bigger. Further, the two wings of Pakistan were separated by over one thousand miles of Indian intervening territory and over 3,000 miles of sea. They were like islands, to maintain contact between them Pakistan needed navy, strong enough to maintain command of the sea around and also to safeguard sea routes which served the two wings of the country. Pakistan also had similar difficulties in the matter of air-transport and air warfare because of the intervening Indian territory and denial of overflight facilities over the Indian territory in the event of war. Further, both the wings did not have any depth in defence. The geographical conditions in the two wings were also so different that Pakistani soldiers and airmen had to be trained for almost all types of fighting. The deserts and the mountainous terrain of West Pakistan required a technique of fighting which was out of place in the jungles, marshes and riverine areas of the Eastern Wing. A glance at the route map of Pakistan revealed clearly another serious handicap in the field of transport and communications, so vital to national defence. In the west the main railway tracks and road connecting Karachi and Lahore, were dangerously close to the Indian border. In fact, Lahore, the headquarters of the railways and the centre of the telegraph and telephone systems was only a score of miles from the Indian border. The position in the Eastern wing was still worse. Chittagong, Narayanganj and Khulna-Prabhatipur were the two vital railway lines. The Chittagong-Narayanganj railway line ran very close to the Indian border. Between Comilla and Akhura, the track was within a stone throw from Indian territory. Kasba Railway station was almost on the Indo-Pakistan border. The Khulna-Prabhatipur Railway line was also unsafe. At Darshana and Hilli, the track almost touched the Indian border. The only way open to Pakistan was to develop two sphere armed forces, strong enough to hold back the invading forces sufficiently long for reinforcement to arrive. Pakistan could be attacked at both the wings simultaneously. Her aerial links between both the wings could be cut by deny-

CONVEYORS AND MATERIAL HANDLING EQUIPMENTS

Manufacturers and Designers of

CONVEYORS E. G. APRON, BELT, BUCKET, CHAIN, FLIGHT, OVERHEAD CHAIN, ROLLER, SCREW AND SLAT AS PER THE CONSUMER'S SPECIFICATION AND MATERIAL HANDLING EQUIPMENTS EG. STEEL BARROWS, TROLLEYS ETC.

PANCHSHILLA ENGINEERING CO.

25/27, PIRU LANE, BHINDI BAZAR, BOMBAY-9.

Factory : 200A, NEW MILL ROAD, AGRA ROAD, KURLA,
BOMBAY-70.

Telephone :- Office : 3 3 1 7 4 4
Factory : 5 5 5 7 2 8
Residence : 3 6 0 1 2 6
5 3 2 6 6 6

Do You Need **PAPER?**

CONTACT:

B. K. PAPER MILLS PRIVATE LIMITED

MANUFACTURERS OF :

QUALITY WHITE PRINTING CREAM WOVE,

LEDGER, MANIFOLD PAPERS.

Regd. Office : 306, Kalbadevi Road, Bombay-2. Phone 318546

Calcutta Office : 24, R. N. Mukherjee Road, Calcutta-1. Phone 234839

Mills : Village Vadavali P. O. Kalyan, District Thana.

ing over-flights facilities over her territory and similarly her entire sea coast could be blocked.

THE PAKISTANI SHIELD . . . BUILD-UP MOVES:- In the grips of the so-called massive monstrous military threat posed by India, Pakistan moved to organise her so-called defensive capabilities. In order to achieve her objectives, Pakistan launched a four pronged drive. Pakistan first moved to put in fighting trim of the highest order, her existing armed forces. Simultaneously, Pakistan moved to expand them to the utmost limits possible under the circumstances. Pakistan claimed that her manpower was the finest in the world. On the external front, Pakistan first moved to win over the Muslim countries in the name of Islam and the so called military threats posed by Hindu India for the total extermination of Islam and Islamic way of life. It was indeed a camouflaged plan par excellence to utilise the military resources of other Muslim countries for aggressive designs of Pakistan. Finally, Pakistan moved to participate in the alliances sponsored by the United States of America and thereby open up the channels for massive supplies of most sophisticated military hardware, supporting elements and training facilities. Here, Pakistan claimed to be the bulwark of defence against international communism . . . a theme most acceptable to the high ups in the United States of America.

ON THE ISLAMIC FRONT:- Thinking that, it was easiest of all, Pakistan first launched the offensive against India in the Muslim countries. It was after the Commonwealth Prime Ministers Conference in 1949, that Pakistan started a search for friends and allies in the Muslim countries. The then Pakistani Prime Minister, visited Egypt, Iraq and Iran and paraded before them the monstrosity of Hindu India. Back in Pakistan, he mooted the idea of World Islamic Conference. The move did not meet with success. Pakistan then tried to set up an Inter-Islam Consultative Body. This too could take any shape. The then President of Pakistani Muslim League even went to fantastic limits. He raised the banner of Islamistan, which aimed at bringing all Muslim countries closer together under some sort of overriding sovereignty. The reaction again was not favourable. Ulterior motives were attributed to Pakistan and her sincerity was doubted every where. Pakistan took several other steps in the direction. However, all fell dangerously short of expectations. Islamic unity to serve Pakistani purposes remained a mirage . . . a dream. However, Pakistan was more successful on the diplomatic levels. Pakistan succeeded in moving Iran to sign a Treaty of Friendship. This treaty was signed in Teheran on February 18, 1950. Pakistan also succeeded in winning over Iraq and Syria for similar treaties. These treaties were almost identical in contents. They were claimed to be motivated by the desire of strengthening and perpetuating the bonds of Islamic brotherhood. The countries promised to negotiate agreements on several subjects including cultural relations, to settle disputes peacefully in a spirit of brotherliness. Pakistan later signed similar treaties with Turkey, Egypt and Saudi Arabia, in 1952 with Yemen and in 1953 with Lebanon. This was supplemented by the moves to exchange military good-will missions. To all this effort, the visits of the Heads of the various countries gave a physical demonstration. In all these contacts, problems of security, individual and collective, were discussed. It was during visits and discussions that Pakistan found herself very close to Turkey. Pakistan therefore signed an agreement for Mutual Friendship and Co-operation on April 2, 1954. On December 23, 1955, Pakistan acceded to the Pact of Mutual Co-operation between Iraq and Turkey. Pakistan immediately claimed the Treaty as the very first fruit of her policy to merge security with cultural ties. The agree-

ment allied Pakistan with the strongest country in the Middle East and the one which could, to a large extent, meet its requirements in arms and ammunition. The consultation and co-operation between contracting parties in the field of the defence covered the following points: **'(a) Exchange of information for the purpose of deriving benefit jointly from technical experience and progress. (b) Endeavours to meet as far as possible the requirements of the parties in the production of arms and ammunition and (c) Studies and determination of the ways and extent of co-operation in accordance with Article 51 of the Charter of the United Nations, should an unprovoked attack occur against them** wide notice and met with approval of the United States of America. In South East Asia, Pakistan signed similar treaties first with Philippines and then with Indonesia and made similar overtures to Malaysia which had also adopted Islam as the state religion. Pakistan, however, did not get any where near to drawing these countries into the plot and conspiracy of hatred against India. Indian relations with all the Muslim countries, particularly with Egypt remained friendly.

INTO THE WESTERN WORLD:- Pakistan was born into the Commonwealth. The June 3, 1947 Plan provided for this relationship. While welcoming the relationship, Pakistan expected that the United Kingdom would show sympathy and consideration for the smaller, less gifted Dominion, which had to face innumerable difficulties in the initial stages. Pakistan expressed her dissatisfaction with the working of the Commonwealth, particularly in relation to India. On number of occasions, Pakistan threatened to quit the Commonwealth. However, Pakistan continued the membership, drawing whatever advantages that it could. Pakistan's next major thrust into the Western World was the agreement with the United States of America. On May 19, 1954, Pakistan signed the Mutual Defence Agreement with the USA. Under this agreement, the Governments of Pakistan and the United States of America pledged to **'further the ability of nations dedicated to the purpose and principles of the United Nations with armed forces as contemplated by the Charter and to participate in United Nations collective defence arrangement measures.** Further, the United States of America agreed to make available to Pakistan equipment, materials, services or other assistance with such terms and conditions as may be mutually agreed. Explaining to the world, the advantages of such an agreement, Mr. John D. Jeregan of U.S. said: **'Pakistan has concrete assets to offer to the free world. She has a fine army which provided a large share of distinguished regiments to the Indian Army before partition . . . regiments noted for bravery in two world wars. (The statement was contradictory to the comments on military assets of partition made by Pakistan earlier). She has ample manpower to expand that army. Her military traditions and ability are proved. She occupies important location covering the invasion routes into the Indian sub-continent and also one which would enable her, under conditions of strength, to support the defence of Near East project . . . To realise her potential, however, Pakistan needs outside assistance. She does not have the raw material for the productive capacity to arm herself sufficiently to withstand outside aggression.'**

Having secured the first major objective, Pakistan then moved to join other countries already won over by the United States of America for defensive alliances. Pakistan's major triumph in this regard was her entry into the **Baghdad Pact, as later known CENTO.** In September 23, 1955, Pakistan deposited its instrument of accession in which it was recalled that, **'An agreement**

for Friendly Co-operation was concluded between Pakistan and Turkey to promote consultation and co-operation between the two countries in every field for the purpose of promoting their mutual security and well being and stated that 'accession of Pakistan to the Pact further strengthened the security and defence of Pakistan as well the high contracting parties.' The great advantage to Pakistan was that, all the Pact countries had Military Assistance Arrangements with the United States of America and these supplies could be easily diverted or even smuggled into Pakistan just by parading the imaginary military threats of India.

SEATO was another alliance sponsored by the United States of America. Its main objective according to the United States of America was defence against possible and probable threats of aggression posed by Communist China. On behalf of the Asian countries in the region, the first voice for such an alliance was raised by Philippine. In his address to the US Senate in August, 1949, the Philippine President said: 'Today the most urgent problem that confronts the Philippines and other free countries of Asia is the problem of security . . . No one who realises the extent of the menace to which Asia is exposed can well afford to rest at ease. Asia with its vast population and incalculable resources cannot and ought not to be lost to Communism by default'. In 1950, war broke out in Korea and Communist China took part in it. This development made the US Committee on Foreign Affairs of the House of Representatives endorse the proposal for a mutual security pact in the Pacific. The need was further underlined by the active part taken by the Chinese in the war in Indo-China. After their discussion of the international situation in June 1954, the US President and the British Prime Minister announced that they would press forward with plans for collective defence in South East Asia. The Treaty was ultimately signed by eight countries (including Pakistan) on September 8, 1954. It was the argument of Pakistan that her Eastern wing was extremely difficult to organise. Its geography and small area presented great handicaps. Pakistan, therefore, wanted that the Treaty should be concerned with resisting aggression of every description and from every quarter and that it was a mistake to imply that one kind of aggression, rather than another, required speedier action. It was under pressure of this argument that the United States agreed to append an understanding to the Treaty that its recognition of the effect of aggression and armed attack and its agreement with reference thereto in **Article IV Paragraph 1**, applied only to communist aggression, but it affirmed that in the event of other aggression or armed attacks, it will consult, under provisions of **Article IV, Paragraph 2**. There were two more limiting considerations in the terms of the Treaty. **The first one was that the aggression by means of armed attack should endanger the party's own peace and security. The second was that each party will act to meet the common danger in accordance with its constitutional processes.** It was the objective of Pakistan to exploit the understanding and limitations to her own military advantage vis-a-vis India. It were the accumulative results of all these Treaties and agreements that Pakistani President, **Field Marshal Ayub Khan**, was able to claim that Pakistan has been on the whole fairly successful in safeguarding its three fundamental interests. The defence agreements have secured its integrity reasonably well. Pakistan has grown to possess armed forces which are the sharpest instrument of peace and war and the greatest deterrent against aggression. Pakistan has so powerful allies that they can defend it against any aggressor. It has come very close to some Muslim countries and with others its relations are cordial. In the field of eco-

WITH BEST COMPLIMENTS FROM
NAVBHARAT ELECTRICAL INDUSTRIES

REMJI CHAMBERS, HOSPITAL LANE,
(NEAR BOMBAY HOSPITAL) BOMBAY-20.

(PHONE: 296914)

MANUFACTURERS OF
INDUSTRIAL HEATING ELEMENTS.



FACTORY — 14, MENON ESTATE, S. V. ROAD, GOREGAON,
BOMBAY - 62. (Phone: 691552)

Grams: NIKROME

Telex: 011-3785

WITH THE COMPLIMENTS OF
SILICA WARE PVT. LTD.

54-C, CHOTANI ESTATE, PROCTOR ROAD,

GRANT ROAD, BOMBAY-7. (Phone: 357442)

Factory:—Plot No. 91-A, Road No. 16,

WAGLE INDUSTRIAL ESTATE, THANA. (Phone: 591318)

●
MANUFACTURERS OF:— **LELE BRAND, GLASS APPARATUS,
INSTRUMENTS AND APPLIANCES.**

●
DEALERS IN:—**CORNING, BOROSIL, PYREX AND OTHER
LABORATORY GLASS WARE AND INSTRUMENTS.**

conomic development, it has moved very fast . . . so much so that installation of any more big industries has become surplus to national requirements.

INDIAN PROBLEMS

IMMEDIATELY after the dawn of independence, the only threat to national defence and security was seen emerging from Pakistan which had embarked upon a crusade to run down India as 'Hindu Monster' and an arch enemy of Islam. This itself needed powerful land, sea and air forces when it was seen that Indian land frontiers facing Pakistan ran to several thousands of miles and passed through different layers of terrain. Indian sea coast was also long and winding and was vulnerable at several points. Although the British had left, there were still the French and the Portuguese entrenched upon chunks of Indian territory. The Portuguese were known to be the most die-hard imperialists. They were the oldest allies of Great Britain. Their continued presence on the Indian territory could any time develop into a major land-sea-air threat. Within India, there were nearly six hundred princely states. Some of these states were big and had their own armed forces. Generally, they were not inclined to accept the idea of merger with the rest of the country. The position in some of the states was further complicated by the fact that while the bulk of the population belonged to one community the ruler happened to belong to another community. These rulers also had the preponderance of their own community in the administrative, police and armed services. All of them were favourites of the British and could any time expect politico-diplomatic support to their ambitions to be free and sovereign in their own right. They could also play into the hands of Pakistan which had accepted all enemies of India as her very best friends.

THE SOCIAL STRUCTURE:- Despite the fact of Pakistan, there was still a big chunk of Muslims left over in India. A vast majority of these Muslims had been in the forefront of the struggle for Pakistan and there were widespread doubts if they would toe the line of Indian national reconstruction and regeneration. Even otherwise, the Indian society was multi-religious and various sections thereof had their own mutual tensions and their own political ambitions. The position was further complicated by the mounting demand for linguistic states with wide measure of autonomy. Officially, India had declared herself irrevocably committed to the ideals of democracy, secularism and socialism. All that India could achieve under the circumstances was '**unity in diversity**'. The process could not but be long, hazardous and time consuming.

NON-VIOLENCE:- India had emerged from the struggle of non-violence. Immediately after the dawn of freedom there were many who felt convinced that as a 'peaceful and peace loving country', India will have to wage no wars . . . defensive or offensive . . . that India would be able to solve all the problems of her national defence and security by the process of non-violence. This element, therefore, did not see any reason for the continued existence of even the broken truncated armed forces inherited from the British. Any talk of expanding, modernising and strengthening the existing armed forces to meet the external military threats certainly stuck to their throats. This was despite the fact that the existing armed forces were not strong enough to stand the strains of even a limited conflict, feverish preparations for which were already afoot in Pakistan.

INDUSTRIAL POTENTIAL:- Undoubtedly, Indian industrial and agricultural base was much more developed than that of Pakistan. There were nearly twenty ordnance factories and a number of other defence production establishments which could contribute to the defence stores and equipment required by the armed forces. However, they could not contribute anything to the sophisticated armament which had been developed and used in World War II and which was being further developed in the militarily advanced countries. The only way open, under the circumstances was reliance on external sources and resources of armament production and procurement. A move in this direction had already been made by Pakistan to join the Western Alliances and open up channels for the massive supply of military hardware of the most sophisticated type under what was called the 'military aid programme' launched by the power giants . . . the United States of America and the Soviet Union. Here again politics dictated India to take up an entirely different stand. In order to convert the areas vacated by the Imperialists into 'area of peace', India declared herself wholly opposed to joining any of the alliance and involving herself in the war games of any of the power giants. This naturally threw back the country on her own sources and resources the development of which immediately did not appear so very easy.

CONSOLIDATION—FIRST BEGINNINGS:- Despite all the limitations imposed by political, philosophical and ideological concepts, India turned to the consolidation up of her existing armed forces into an effective instrument of national defence in the event of an emergency. The fundamentals in regard to the Armed Forces that emerged from the first analysis, examination and evaluation of the existing, emerging and developing problems of national defence and security were: (a) **The Armed Forces should exist only for the purposes of internal security and for defence against proven external aggression.** (b) **The existing armed forces must be consolidated and turned into an effective fighting machine by inducting into them suitable Indian officers at all levels of command and decision.** (c) **Every possible effort must be made to develop national sources and resources in the matter of defence production.**

The Armed Forces Nationalisation Committee had been set up as early as 1946. This committee had submitted its first report in May, 1947. However, whatever the findings and the recommendations of the Committee, they all became obsolete and redundant because in August the same year, India suffered the 'operation break up' and the entire original context of the armed forces was lost. The findings and recommendation of the committee were not completely shelved despite the fact of partition and the break up of the armed forces. However, they could not be immediately implemented because of the disturbed conditions after the dawn of freedom. The first major step taken to give to the armed forces the real contents of the armed forces of a free and unfettered country was that the office of the **Supreme Commander** was dissolved. The three Services were placed under **Commanders-in-Chief**, who were responsible to the Government of India alone. An agreement was also reached with the British Government to terminate the services of the British officers still on the strength of Indian Armed Forces. They were served with three months notice. Those whose services were still considered necessary were offered new terms of service. The enormity and complexity of the task could be judged from the fact that on the eve of Independence, there were ten thousand British officers and they were holding all the command positions. Only half a dozen of the Brigade, Area and Sub-Area commands were held by Indians. Out of the total of eight hundred and fifty officers in the Indian Navy, only two

hundred were Indians. Only one hundred Indian officers and six hundred Indian airmen were on the strength of the Indian Air Force. Out of all the Air Force Station Commands, only one was held by an Indian. In 1950, India was proclaimed Republic. In consequence to this, the Supreme Command of the Armed Forces was vested in the President. The prefix 'Royal' was dropped and the three Services were designated as Indian Army, Indian Navy and Indian Air Force. The Service Chiefs were designated as 'Chief of the Army Staff, Chief of the Naval Staff and Chief of the Air Staff'.

The Armed Forces of the Indian States, known as the Indian States Forces had existed as a separate body for quite a long time. They had participated in the two World Wars and some units had distinguished themselves in action. Although, seemingly under the command of the Ruling Chiefs, the forces in reality were under the control of a separate authority in the Government of India. This was no longer considered to be in tune with the changed conditions in the country. A decision was, therefore, taken to place their overall control and financial responsibility under the Ministry of Defence. It was also decided to integrate the Indian States Forces with the regular army. In view of the fact that the standard of training of the Indian States Forces did not compare well with that of the regular army, and it varied from state to state, a process of selection was devised. Officers and men of the Indian States Forces, who came up to the requisite standard were absorbed in the regular army. The Government experienced no difficulty in the case of those States which immediately decided to merge in the Union. However, the process was projected into those which sought to be free, only after the police action against them was successfully completed. Ultimately, the process emerged to be a major achievement and the armed forces of the country were a single, well knit body having all ingredients of uniformity, discipline and internal cohesion.

FRESH BUILD UP:- Immediately, the threat to Indian security was seen emerging from Pakistan. Pakistan was primarily a land-air power. In the initial stages, therefore, the main concentration was on the expansion, armament and equipment of the Army and the Air Force. There was no shortage of willing manpower in the country. The numerical expansion, therefore, presented no difficulties. The two great limiting factors were armament and equipment and the training facilities.

In view of the fact that India had decided to stay out of the military alliances and power blocks. India could not have the advantages of military aid programmes initiated by the United States of America and the Soviet Union. India had to depend upon her own sources and resources and acquisition and procurement from other countries on purely commercial basis. In order to mobilise and develop national resources and sources, immediate steps were taken to activate the existing ordnance factories and other defence production undertakings to maximum productivity, thoughts were also given to the setting up of new ordnance factories and other defence production undertakings. The enormity of the task could be seen from the fact that the pre-1947 ordnance factories were producing only a limited range of conventional weapons and ammunition and that too for the use of the Army only. The Navy and the Air Force were wholly dependent upon external supplies even in the matter of ammunition. The crowning achievement in the field of defence production was the setting up of **Department of Defence Production and the De-**

partment of Defence Supplies in the Ministry of Defence. The aim of the Department of Defence Production was to equip the national defence forces with indigenously manufactured modern arms, ammunition and equipment and stores. The aim of the Department of Defence Supplies was to co-ordinate and mobilise technical and production resources for the manufacture and supply of products of very rigid technical specifications and promote substitution of import requirements for defence purposes. The greater emphasis of the Department was on electronics, instrumentation, vehicles and ship building stores. The crowning achievements of the new policy were seen in the acquisition of Mazagon Dock at Bombay and the Garden Reach Workshop at Calcutta for the purpose of Ship building and repairs and the location of aircraft production of the most sophisticated type at the various complexes of Hindustan Aeronautics Limited. (See Also 'Defence Production').

Training and indoctrination of the personnel of the armed forces was yet another major problem which the Government of India had to face. Immediately after the dawn of freedom, there was only one major training Establishment in the country . . . **The Indian Military Academy at Dehra Dun.** However, to meet the requirements of the expanding armed forces, steps were taken to set up the **National Defence Academy** at Khadakvasla near Poona. This academy . . . the Indian University of Arms, as it came to be affectionately known to the youth of the country . . . emerged to be a unique establishment in the world providing integrated training for all the three Services. This was later followed by the setting up of the **Staff Training College at Wellington, National Defence College at Delhi** and large number of other institutions providing specialised training in every aspects of modern warfare. As a result of all this, India was not only self-sufficient in the matter of training, but she was also in a position to offer training facilities to the officer cadre of some of the friendly neighbouring countries.

Immediately after the dawn of freedom, there was no serious threat to the security of the Indian coasts. This relief was provided by the presence in strength of the British Navy and the complete absence of any other possible and probable hostile sea power in the Indian Ocean. British, however, were progressively withdrawing from all overseas commitments. There were, therefore, the grave possibilities of other navies, particularly those of the United States of America and the Soviet Union moving in to fill up the vacuum and converting the area into a site of global tensions. Committed as India was to convert the Indian Ocean into an area of peace, India could not possibly neglect her sea arm. India, therefore, took every possible slip to build up the sea arm strong enough to protect the long and winding sea coast as also the sea lanes vital to the growing volume of overseas trade. In the initial stages, India had no option to acquiring warships and the supporting elements from outside sources. However, policy here again, was to develop local resources. The success of the effort, was seen when India was able to acquire the capabilities of producing locally the most sophisticated type of frigates and vast variety of auxiliary vessels. Latest report suggest that India would soon be producing her own submarines of conventional type. (See also "Defence Production").

COMMUNIST THREAT:- On the eve of Independence in India, the countries, in South East Asia were on varying stages of their freedom struggle. In all these countries, the freedom movements were dominated by Communist parties. It was, therefore, clearly seen that free governments, as and when estab-

lished in the area, would be of the communist type and would be tied down to the apron strings of the Soviet Union, the undisputed leader of the Communist World and undisputed overlord of all communist parties. It was also clearly seen that this development would not be to the taste and liking of the United States and her allies in the Western world. There would, therefore be politico-military intervention by them. The event of the greatest significance was expected to be provided by China, where the Communist party under the leadership of **Mao Tse Tung** had registered major victories. The Soviet Union was operating at the global level and its sole confrontation was against the United States of America. China was also expected to be the camp follower of the Soviet Union. However, there were possibilities of China acting on her own and building up her own sphere of influence. China was world's largest and the most populous country. There was also preponderance of Chinese origin population in other South East Asian countries. China, therefore, was more suited to effective communist presence in these countries than the Soviet Union.

Despite all this, India did not see the possibilities of any serious military threat being posed by China. The reason for such cosy and comforting thought in India was that Indian home and foreign policies were irrevocably committed to freedom, democracy and socialism . . . a theme most acceptable to all Communist countries, including China. There was robust faith and confidence at all levels of Indian political life that China, once she was victorious in her anti-imperialist struggle, would be friendly and co-operating with India and all other countries on the continent struggling for their national freedom. This, in itself, would be an effective deterrent to outside intervention of the **'imperialists-capitalist type'** and would be contributory to the emergence and development of the **'area of peace'**. It was in the context of these policies and philosophies that India hailed the emergence of free China and the establishment of the Communist Regime on the mainland. It was also in the context of these policies and philosophies that India offered to China the five principles of existence as enshrined in **Panchsheel**. India hailed it as a major triumph when China accepted the principles. In the wake of this acceptance came the mighty and irresistible wave of **'Hindi-Chini Bhai Bhai'** which gripped the minds of the Indian people for over ten long years. This was despite the fact that Communist China had not given up her **'hate India Campaign'**, the build up of her armed forces and the news of Chinese laying claim to chunks of Indian territories were trickling out.

India did not wake up to the realities of the unpredictability and unreliability of the Chinese mind even when China walked into the **Himalayan State of Tibet** and virtually integrated it with her mainland. This change in the situation presented India with nearly two thousand miles of frontier running all along the Tibetan border and some portions of China proper. This border stretched from Ladakh in the north, the Chinese province of Sinkiang and to the North East Frontier areas and ultimately linked up with Burma on the southern most point. India did not realise the mounting gravity of the situation even when China began to interfere in the internal affairs of Sikkim and Bhutan. These problematic states had mixed population of Chinese, Tibetan and Indian origin and they had a long history of shifting loyalties. The high-ups in the Indian Government still thought that China could not embark upon any military adventure against India. They further thought that the terrain, the cruelest and the most inhospitable in the world, would not permit the Chinese to launch any large scale military movement. India woke up to the grim realities only when



WITH
OUR
WARMEST
GREETINGS
TO

ALL OFFICERS
AND MEN OF

- ARMY
- NAVY
- AIR FORCE
- AND
- AUXILIARY ARMS

D. KARMALI & COMPANY
GOVERNMENT AND MUNICIPAL CONTRACTORS
FOR MANDAPS, EXHIBITIONS, ELECTRIC LIGHTS
AND SUPPLIERS OF FURNITURE ON HIRE
133/35, CHAKLA STREET, BOMBAY-3.

Phone : 323205

in October, 1962. China mounted her massive monstrous military aggression and converted NEFA into the graveyard of centuries old Indian military renown.

INDIA AT WAR

INDIA has been free for a little over twenty-five years. It is on record that despite provocations, India has not gone to war against any other country. Unfortunately, however, other countries have not been understanding of and granting to India. Misunderstanding Indian desire for peace as her inherent weakness, they have mounted military aggressions and have compelled India to commit armed forces in defence of national freedom, honour and integrity. During this short period, India has suffered as many as three military aggressions mounted by Pakistan and one by China. India has also suffered their direct and indirect encouragement to those princely states which took up the wholly untenable stand against merger and the Nagas and Mizos who raised the demand of their so-called 'homelands'. India has also suffered similar external encouragement to the Portuguese to continue their stranglehold on Indian territories of Goa, Diu and Daman. This encouragement was one of the major factors that Portuguese launched what they were pleased to call 'mobile mechanised war' against India. It must fill every Indian with intense patriotic pride that beginning with the first operations in Jammu and Kashmir, Indian Armed Forces have acquitted themselves in the true image of their centuries old renown and to the greatest glory of the national ideals and objectives. The only set back, if it may be called a set-back, has been against the Chinese. However, subsequent events have raised the Indian Armed Forces to much higher estimation than at any time in earlier Indian history.

JAMMU AND KASHMIR . . .

BEGINNING with the operations in Jammu and Kashmir, Indian Armed Forces have remained committed to field actions, almost with a break. However, the operations during this period have fallen into four clear categories. (a) For national integration, (b) At the service of the United Nations, (c) Resistance to undeclared wars and (d) in support of people fighting for their national freedom.

PAKISTANI CLAIMS:- The state of Jammu and Kashmir was contiguous both with India and Pakistan. It was almost wedged between the two and had common borders with both. The state was also torn between the two in regard to her economic and political relations. Pakistan claimed accession of the State, on the ground that, seventy seven percent of the population was Muslim. The two all weather roads, which connected the State with the outside world lead into Pakistan. The three main rivers of West Pakistan . . . the Indus, the Jhelum and the Chenab, rose in or flew through the State. The state was so situated strategically that an unfriendly power there could outflank the defences of West Pakistan and create trouble in the tribal areas. However, the

power of accession was vested in the Ruler who could not make up his mind immediately. In order to think out the dilemma, he sought to maintain the status quo by entering into 'Stand Still Agreement' both with India and Pakistan. Pakistan had no intentions of honouring the commitment. Pakistan, therefore, began with breaches and violations. Hardly had the ink on the document dried when Pakistan began applying economic squeeze. When economic noose around the State tightened, Pakistan moved thousands of armed tribesmen to invade the state and force its accession. These tribesmen were fully backed by the Pakistani armed forces kept in combat readiness to move in at the very first favourable opportunity. These tribesmen, armed with a vast variety of small arms, punctured the state frontiers at a number of points. They then fanned out in all directions, scattering before them the units of the State forces wherever they appeared to put up resistance. Ultimately, they closed in on the State capital and placed the aerodrome in mortal jeopardy. They appeared to be very near to the D-Day of their design and conception.

INDIAN MILITARY AID:- Unable to arrest and contain the Pakistani aggression, the Ruler of the State applied for Indian military aid. India, however, made it conditional upon the State's accession to the Union. The Ruler accepted the Indian contention and immediately signed and deposited the Instrument of Accession. On the same day, the Government of India took the momentous decision of moving troops in such strength as would ensure the state's survival. The first wave of Indian troops moved under the command of **Col. D. R. Rai**. The force went into action within a few minutes of their landing, and saved the aerodrome. This was their first major victory. However, their loss was that the commander himself fell in action. Having secured their initial base of operations, Indian troops immediately moved for further action. In order to ensure speedy and effective action all the States Forces and the Indian troops in the area were placed under a single commander. As the operational front expanded and the number of Indian troops increased, the forces in Jammu and Kashmir were split into two divisions and were placed under the command of **Divisional Headquarters** at Jammu and Srinagar. A **Tactical Headquarters** was later established at Jammu. At the same time a **Line of Communication Sub-Area** was added to the Jammu and Kashmir set up. Later, a **Corps Headquarters** was set up in command of the two divisions and the LOC sub-area to relieve the Western Command of the direct responsibility of the operations. **No. 1 Operational Group of the Air Force** was assigned the task of all aerial actions.

Immediately after birth, Pakistan had wailed and lamented that there was no cent percent Muslim until in the earthwhile Indian Army. Pakistan, therefore, had no army. However, unable to keep the Pakistani armed forces participation in the Kashmir struggle right from the date of its commencement a secret, Pakistan invented a novel method of making the participation known. According to Pakistan: On April 20, 1948, the Commander-in-Chief of the Pakistan Army, **Sir Douglas Gracey**, submitted an appreciation of the military situation to the Government. He reported that Indian Army had started an offensive on a small scale and captured Rajauri. He expressed the fear that the Indian Army would soon start a general offensive and that the occupation of Bhimber and Mirpur would bring Indians right up to the Pakistan border and give them the control of the Mangla Headworks. The Commander-in-Chief recommended that, if Pakistan was not to face another serious refugee problem with about 2,75,000

people uprooted from their homes, if India was not to be allowed to sit on the doorstep of Pakistan, if civilian and military morale was not to be affected to a dangerous extent, it was imperative that the Indian army should not be allowed to advance beyond the general line of Uri-Poonch-Naushera. This advice was accepted and Pakistan troops were moved forward to occupy certain defensive positions to ward off the threat.

OPERATIONAL BRILLIANCE:- Launched within a month and a half of the dawn of freedom, under every conceivable hardship and without any prior planning, the operations in Kashmir were the first fiery test of the operational efficiency and brilliance of Indian Armed Forces. Their success or failure could not only push the state of Kashmir into the hell of unending lawlessness and violence, but it could also endanger the very safety and security of India. Out of this test, Indian Armed Forces emerged with flying colours. To their former skill and traditional efficiency, they added new patriotic fervour. Mere efficiency was not enough. A high sense of patriotism alone could conquer the formidable obstacles of nature and men. Indian Armed Forces demonstrated it in plenty and abundance. When committed to battles in the cruel and most inhospitable terrain, and wholly unmindful of the fury of 'General Winter', they worked real miracles. They exploded many a copy book theory of logistics and contributed new and valuable chapters to their earlier war experiences. Over roads and ground, declared wholly impassable for heavy vehicles, they moved their tanks and fought some of the actions which stood out as classic instances of mechanised warfare. On air strips which had been pronounced by experts as unfit for fighter aircraft, the IAF pilots took off and landed with all the ease and efficiency required for the peculiar nature of air warfare. In the epic battle for LEH, **Air Commodore Mehar Singh** undertook the most daring operation known to the history of air warfare till then . . . a flight to LEH along an uncharted route at 23,000 feet altitude and over the world's highest mountain ranges. Flying even without oxygen, he landed on a rough improvised air strip in LEH constructed by a Ladakhi engineer. Despite the massive participation of the tribesmen and the Pakistani regular armed forces, Indian armed forces retained the initiative which they had gained with their first victory at Srinagar aerodrome. So successful were the operations that by the twelfth day the invading forces were on the retreat and defensive. Unfortunately, however, India had earlier referred the matter to the **United Nations**. The UN intervention came exactly at a time when the invading forces had lost their feet and the Indian armed forces were in a position to clear the hostiles from the entire territory of the State. The UN proposed an immediate cease-fire and established a cease fire line within the state. Immediately, Jammu and Kashmir ceased to be a military problem. Instead it became a political problem depending upon diplomacy and negotiations at the international level. But the fact could not be denied that Indian operating forces had done their job in a truly worthy manner and had earned the admiration and gratitude of the people of Jammu and Kashmir, as also of India.

HYDERABAD

WHILE the Indian troops were still committed to bloody combats in Jammu and Kashmir, serious and menacing situation developed in the Dominions of Nizam of Hyderabad. It was the largest Princely State and it lay right in the belly of India. Although the majority of the population was non-Muslim,

the ruler was a Muslim. The State also had its own small army, its own Police Services and its own para-military organisations. The strongest para-military organisation was the Itchad-ul-Muslimin. Its members were known as Razakars. The State could depend very much on all-out support of Pakistan and limited politico-diplomatic support from Great Britain. This was evidenced by the statement made by the British Secretary of State for India that "Hyderabad could remain independent if she so chose". Encouraged by these 'favourable' circumstances, the Nizam of Hyderabad rejected the advice given by Lord Mountbatten, rejected the wishes of the majority of the population . . . he even rejected the geographical compulsions and declared his wish to be free.

THE STAND STILL AGREEMENT:- Right from the commencement of the effort, the Itchad-ul-Muslimin had done every thing possible to obstruct the signing of the **Stand Still Agreement**. It was only after several meetings between the Government of India and the representatives of the Nizam that the 'Stand Still Agreement' was signed, vesting in the Government of India powers on all matters of common concern, except the Prerogative functions, but including Defence, Foreign Affairs and Communications. The Agreement made it clear that the State of Hyderabad will not accede to Pakistan. The agreement was not to the taste and liking of Itchad-ul-Muslimin. The organisation, therefore, created every possible difficulty in the way of its implementation by the Nizam. The appointment of the Itchad leader, Mir Naik Ali, as the Prime Minister in place of Nawab of Chattarai, came as a proof positive that things were not moving in the letter and spirit of the Agreement. Except for the withdrawal of the Indian troops from Secunderabad the Agreement hardly worked. In the meantime, the Razakar terror in the State assumed alarming proportions and the Itchad-ul-Muslimin threatened to plant the Asaf Jahi Flag on Red Fort in Delhi, if India dared to take any military action to crush and kill the movement for independence. The situation took yet another dangerous turn when Nizam's Government announced its decision to take the dispute to the United Nations. Still not losing patience with the fast deteriorating situation, the Government of India demanded for the last time that the Nizam's Government should disband the Razakars and allow the Indian troops to be re-stationed in Secunderabad in such strength as may be considered necessary to maintain law and order and protect the lives and property of the people. The Nizam's Government flatly denied that there was any break down of law and order. On the contrary, it charged that the tension was due to raids which were being organised from across the border and the military threats that were being held out by Delhi. The Nizam's Government rejected both the demands and appeared to be preparing for a regular war.

Earlier, Sardar Vallabhbhai Patel, India's Deputy Prime Minister, had made it clear that an independent Hyderabad would be contrary to the Indian policy of national integration. It would be a standing threat to the very security of the country. India could under no circumstances, compromise about accession and responsible government in the State. Having exhausted all ways and means of persuasion, India could see no other way except move troops to arrest and contain the emerging, developing and mounting threat to the lives and property of the people in the State and the threat to the very security of India.

THE OPERATIONS:- At 4 A.M. on September 13, 1948, Indian Army units moved. The Nizam at that time had an army of 25,000 troops. In addition, the Nizam had some 35,000 police personnel. The numerical strength of

Razakars could not be immediately known, but it ran to several thousands. Whatever the size and strength of the Army, the Police and the Razakars, they were not well armed and trained. They could not acquire the military hardware from outside sources. There was no way to reach even if the outside sources had offered . . . Possibly, the Nizam was still depending upon the so called world wide public reactions and the United Nations intervention.

The Indian Army units under the overall command of Southern Command entered the State. They met some initial resistance. But it was ineffective and very short lived. Within four and a half days, all resistance collapsed, the Nizam capitulated. The Government resigned and the Nizam announced his decision to withdraw the case from the UN. Immediately, the state was placed under a Military Governor and every possible step was taken to restore law and order. The State was integrated with the Indian Union and granted the same status as had been done to other Princely states. The reactions in Pakistan were bitter. The reactions in Great Britain were also not pleasant. On September 13, 1948, references to the so-called fighting in Hyderabad were made in the House of Commons. The British prejudice against India could be easily seen from the statement made by Sir Anthony Eden, **'It was beyond doubt that the Dominion of India had committed flagrant and inexcusable breach of their own agreement with Hyderabad and that the Invasion of Hyderabad by the armies and air forces of the Dominion of India was in fact an act of aggression.'** However, whatever the reactions, in Pakistan and Great Britain, wishes of the people were carried out, the threat to the internal security of India was removed and the process of national integration was carried a step further . . . **a big step further indeed.**

JUNAGADH

JUNAGADH was another Indian Princely state where the Government of India had to resort to minor Police action.

THE STRUCTURE:- Covering an area of 3,3337 square miles, the State lay in the southern most part of Kathiawar Peninsula. It was surrounded by about forty five other states which had already acceded to India. Further, the territory of the state was not one continuous landmass. Parts of it were either contained or encircled by the territories of other states. The railway and post and telegraph services were a part of the Indian system. Out of the total population of 6,71,000, 5,43,000 were non-Muslims. Despite all this, the Nawab announced his decision to accede to Pakistan. In a statement on his astounding decision the Nawab said, **'After anxious consideration and the most careful balancing of all factors, the Government of the State have decided to accede to Pakistan.'** It was an embarrassing decision, not only to India, but also to Pakistan. It took the Government of Pakistan about a month to accept this accession. It was mainly because, in the opinion of Pakistan, the rejection would have had a disastrous effect on other states planning to accede to Pakistan.

THE POLICE ACTION:- On September 17, 1947, the Indian cabinet met to discuss the extraordinary situation arising out of the Nawab's decision. It decided that in order to maintain law and order in the area, and in order to permit the Nawab to reconsider the decision, Indian troops and the troops of

Whatever
your feet are doing
HHM has the right socks
to do it in!

At work or play, your feet do well in
HHM socks. 100% stretchable
nylon socks in a glorious range of
designs and colours.

No wearing out for HHM socks.
Made stronger with double heel
and toe, HHM socks last you through
thick and thin.

For ladies, HHM make elegant
nylon briefs. For the man-about-town,
snug, sturdy underwear too.



Take a royal step-
demand HHM socks



HINDUSTAN HOSIERY MILLS
Kalachowki Road, Bombay 33.

the acceding states should be suitably dispersed around the state. Two days later, the Indian representative V. P. Menon, arrived in Junagadh to tell the Dewan that the people of Kathiawar were restive . . . that in their utter desperation, they might take the law into their own hands. That the Nawab's decision was not accepted by the entire State was evidenced by the fact that Mangrol offered to accede to India and this accession was immediately accepted. Since the Nawab did not give second thoughts to his decision, the Government of India was compelled to move troops. The Nawab had no armed forces. Indian forces moved into Babriad and Mangrol. It took another week to move into Junagadh itself. The police action marked the end of campaigning for the accession of Indian States.

THE NAGA HOSTILES

COMBAT commitment in the State of Jammu and Kashmir was of course of major military significance. It revealed the military mind of Pakistan. It also gave an approximate idea of the nature and character, extent and intensity of irregular and positional warfare that she could impose on India. It also pointed to the nature and character of vulnerability in the Indian socio-political set up that she could exploit to further her military ends. However, a new commitment of major military significance arose when a section of the Nagas under the leadership of A. W. Phizo raised the demand of an independent and sovereign homeland for the Nagas.

THE ARMED STRUGGLE THREAT:- The militant Nagas . . . a tribal people from the hills surrounding the picturesque Manipur State . . . were an integral part of the Indian community. They were born guerilla fighters. During World War II, they had played a vital role in the formation of the famous V-force. During operations against Japan, they had demonstrated their remarkable capabilities of acting as eyes and ears for the regular military forces. During the course of these operations, and in the period immediately following the close of the war, they had captured sizeable quantities of firearms, particularly those suited to guerilla warfare and had stored them in remote and inaccessible hiding places. In order to press their demand for a homeland in a real politico-military way, they set up their own under-ground Provisional Government and organised themselves into an army of a sort. When they found Delhi unyielding to their demand, they embarked upon an 'armed struggle.'

INDIAN REACTION:- In the initial stages, the Government of India took a 'soft line' and deployed only the units of Armed Police and Assam Rifles. However, when the operations progressed, the Government of India found that the Naga resources of firearms were not only wartime dumps but large scale capture and smuggling from outside sources. The violence and lawlessness unleashed by them was found quite capable of covering extensive areas and keeping the local population under unacceptable terror and therefore yielding to their demands for local supplies, local manpower, protection and intelligence gathering. In order to meet the deteriorating situation, the Government of India reversed its earlier decision and took the hard line. While still treating it as a problem of law and order and internal security, the Government of India resorted to military build up to arrest and contain the lawlessness unleashed by the Naga hos-

tiles. The phased military build up continued till the time there came into existence a full fledged ASSAM COMMAND with headquarters based at Kohima.

THE OPERATIONS:- The operations against the Nagas lasted for several months. They proved hazardous and they cost several lives. However, Indian operating forces proved themselves worthy of the task assigned to them. Acting within the limitation of 'absolute minimum forces and without hurting the sentiments of the people in the region', they set examples par excellence in their counter-insurgency warfare. They successfully isolated the hostiles from the local population and denied to them the very essence of guerrilla warfare . . . local support, local supplies and local intelligence gathering capabilities. They then forced them, either to abandon or to come out in the open and face annihilating battles. The series of defeats suffered by the Naga hostiles had its own salutary impact on the minds of the people. They were no longer under terror. The real triumph of the Indian operating forces came when the masses of the people ceased to look upon the Naga hostiles as their protectors and champions of their cause. They began to veer round to the more natural, more practical, more feasible and more patriotic stand for Nagaland as a constituent state of the Indian Union and enjoying the same status and privileges as other states. The decision of the Government of India to concede such a demand was announced in August, 1960. It was amidst unprecedented enthusiasm of the Naga people that the **Interim Council** for the new State was inaugurated on February 1, 1961. The essence of the Naga demand was met. There could, therefore, be no further cause for 'armed struggle'. However, the hard core of the Naga hostiles still remained on war path. Their reliance hereafter was not on the Naga people or the fight for their cause. Their reliance hereafter was on outside sources and resources, hostile to the ruling authority in India and their objective was to install themselves in power. They, therefore, retreated into what was then 'East Pakistan' and Burma. Some of them even crossed into China for what was claimed to be advanced training in guerrilla warfare and procurement of armament and equipment necessary for such a warfare.

THE APPRECIATION:- Indian Armed Forces were supposed to have had no earlier experience in counter-guerrilla or counter-insurgency warfare. However, the operations turned out to be yet another brilliant achievement and yet another glorious chapter of the 'glory covered' history of Indian armed forces. The brilliant operational capabilities of the operating forces were duly recognised by the Government and a large number of personnel were awarded the highest decorations for most conspicuous bravery, prominent acts of daring, valour and self-sacrifice in the cause of national integration. While operating not in the face of the enemy, but a section of their own people who had posed a mortal threat to law and order and internal security of the entire country. Historical section in the Ministry of Defence is reported to have completed the compilation of the story of the operations against the Naga hostiles. This compilation, as and when published, will throw a flood of light on the hitherto unknown facts and factors of operations and serve as an inexhaustible mine of objective lessons in counter-insurgency and counter-guerrilla warfare. It will also immortalise those who fell in action so that the rest of the Nagas and the people in the rest of the country may live peacefully and enjoy the benefits of freedom, law and order.

LATEST POSITION:- Reporting at the end of 1971, the Ministry of Defence stated that the Security Forces which were, for the first time deployed

in Nagaland in 1956, for the maintenance of law and order, continued to be deployed there. An agreement on the suspension of operations in Nagaland and the Northern region of Manipur, which has been in force since September 1964, has been extended from time to time by the Governor of Assam and Nagaland, taking into consideration the circumstances prevailing in the region. This agreement, however, does not inhibit the Security Forces from taking action against the unlawful elements indulging in activities prejudicial to the unity, integrity and security of India.

During the last 2 years, the organisation of the Naga hostiles have suffered severe setbacks. They are sharply divided and lack cohesion and unity. The Security Forces have taken all necessary and possible steps to prevent the movement of hostile Nagas into and out of India. During 1971, in encounters between the Security Forces and the hostiles, 34 hostiles were killed and 25 wounded. A total of 844 hostile Nagas were captured and 211 surrendered to the Security Forces. 393 weapons, including rocket launchers, light machine guns, sub machine guns, sten guns, rifles, mortars, pistols and non-Service Pattern weapons, as well as considerable quantities of ammunition, were also captured. Efforts of the hostile Nagas to extort money and food, and to get recruits from the Naga villages have been largely frustrated by the resistance of the Naga people, and the vigilance of our Security Forces. Of the four camps opened in Nagaland for the rehabilitation of hostile Nagas surrendering voluntarily with arms, three have been closed down. The remaining camp has been retained for a further period of one year. After reorientation, the inmates of these camps are discharged, and allowed to return to their villages. Those inmates who seek military employment are recruited to the Naga Regiment, if found suitable. Inmates wanting to join the Police are recruited to the Nagaland Armed Police, or the Nagaland Police, or to any of the Police Force under the Union, depending on their aptitude and suitability.

LIBERATION OF GOA

ON the eve of Independence, Indian territories of Goa, Diu and Daman were under the Portuguese stranglehold. The Portuguese were the most die hard European imperialist power. They had their own powerful armed forces. They had stationed a sizeable portion of them on the Indian territories. They were the oldest allies of Great Britain and in the event of any military clash with another country, they could depend upon politico-military support from Great Britain. Later, they had joined the NATO alliance and could have the advantages of all the aid programmes and collective defence commitments, particularly from the United States of America. Near at hand, they had Pakistan, always ready and prepared to be friendly and supporting to all those who would be hostile to India.

THE PEACEFUL MEANS:- Immediately after the dawn of Independence, the Government of India had committed themselves irrevocably to the settlement of all disputes by peaceful means only. The Government of India extended this policy to the Portuguese rulers and tried by every possible means to impress upon them that they quit the Indian territories with dignity and honour and permit the Indians under their stranglehold to join the rest of the Indian community and play their rightful role in the process of national reconstruction

**OFFICERS AND MEN OF
OUR GALLANT ARMED FORCES**

•
WE SALUTE YOU FOR YOUR
MOST OUTSTANDING PERFORMANCE
IN DEFENCE OF OUR NATIONAL
IDEALS AND OBJECTIVES AND
PLEDGE OUR MOST UNRESERVED SERVICES.

•
B. C. BUHARIWALA & SONS

(Estd : 1925)

5, GRAHAM ROAD, BALLARD ESTATE, BOMBAY-1.
PHONE : 265451

•
SHIPPING AND CLEARING AGENTS
SERVING THE ARMED FORCES FOR TWENTY YEARS.

★~
WITH OUR WARMEST GREETINGS TO :
ALL OFFICERS AND MEN OF OUR
ARMED FORCES



MADHU & USHA

211-305, BHARAT INDUSTRIAL ESTATE,
SEWREE, BOMBAY-15. PHONE : 442984

Manufacturers & Exporters

- SPECTACLES / SUN-GOGGLES
- WATCH STRAPS
- IMITATION JEWELLERY
- PLASTIC GOODS

and national regeneration. On every available occasion, the Government of India pointed out to the Portuguese that the Indian people under their stranglehold were in complete revolt against the foreign imperialist rule and they could not and would not accept to be in chains for long. So much was the patience and restraint shown by the Government of India that fourteen long years passed and the Portuguese were still relying upon a reign of terror on the local population. They were also holding out threats of a regular war if the Government of India ever took any military measures to encroach upon their sovereignty on the Indian territories. They further threatened that they would not be alone in resisting the Indian military aggression. Clearly they were hinting at the politico-military advantages that they could draw from their alliance with Great Britain, the membership of the **Nato Alliance** and the anti-Indian policy of Pakistan.

WIDER CONFLICT—THE FEARS:- Undoubtedly, the politico-military situation was grim. There were also widespread fears in the country that a military clash with the Portuguese might be long and bitter and might escalate into a wider international conflagration. However, the situation was not without consolations to the Indian side. Both Great Britain and the United States of America had declared themselves irrevocably committed to the liquidation of all forms of colonialism and neo-colonialism. As such, they could not possibly run the risk of negating their own policies by supporting, and much less, by physically intervening from the Portuguese side. India was also a member of the Commonwealth and could certainly demand British non-intervention in the conflict, if it ever came about. Finally, physical intervention by the United States of America and Great Britain was seen clearly hazardous because of the wave of anger and indignation that would sweep the entire Communist world and pose a threat of a general war.

INDIAN VIEW-POINT—THE CLARIFICATION:- Obviously, it was only after weighing and measuring these factors, and fully safeguarding the Indian position, that the Government of India ultimately decided to take military action to liberate the people of Goa, Diu and Daman. The Government view point on the move was contained in an official communique issued, which said 'India has taken the decision most reluctantly and only when the most patient ever talks, negotiations, parleys and silent and passive sufferings of the local population for over fourteen long years, have failed to impress upon the Portuguese rulers the inevitable and inescapable fact that the people of Goa were Indians and they could not be kept away from the rest of the Indian community. In a press statement issued. Prime Minister Nehru movingly said: "The Government of India have taken the decision to use military force because the Portuguese have left no other alternative to us. It certainly is no pleasure to us." Elaborating the same theme, the then Union Defence Minister, V. K. Krishna Menon said: 'For fourteen long years, India had been patiently trying to negotiate with Portugal . . . India had been trying this despite repeated rebuffs and ruthless suppression of the Goan people by them. The Government of India had been staying its hand despite the rising tide of tempo of the public opinion for liberation.' Clarifying the Indian position vis-a-vis the military activity further, both the Prime Minister and the Defence Minister declared that the military operations against the Portuguese were purely in the nature of Police action in a part of the Indian territory where the law and order had ceased to exist. They were not in the nature of an invasion of any foreign territory and any attempt to characterise them in this way would be wholly opposed to Indian

contention. In order to make the Indian position still more clear, the Union Defence Minister said, 'It has never been and it is not the intention of the Government of India to cause any unnecessary loss of life and property. Army has, therefore, been issued very definite instructions to use the very minimum force. The Army also been issued strict orders to respect most scrupulously the places of worship and cause no violence to the inhabitants of the part of India under the Portuguese rule, till now.'

THE CHIEF OF ARMY STAFF MESSAGE:- In a message to the force assigned to the task, the Chief of the Army Staff said, (1) "The people of Goa have caused the collapse of the colonial rule. The colonialists can no longer maintain themselves or the law and order in the territory. (2) The people of Goa are Indians and have suffered the colonial rule for more than we in the rest of the motherland. (3) You will now enter Goa, not as conquerors of a foreign land, but as a part of the Indian defence forces, who have always served their motherland to defend the honour and security of our people. (4) Goa never belonged to colonial rulers. It belonged to our people from whom it could not be kept away for ever. The colonial occupation has ended. The colonialists have now been ousted and the land and people freed from their rule and the greater freedom of our country has begun. (5) Let your courage and the high purpose of the mission and your sense of duty and discipline be evident to all in Goa, in whatever you do. (6) In Goa you are in India and with your compatriots. Your duty is at home. Go defend and protect the people. Let no one suffer violence. (7) This is for your guidance. Whilst you are engaged in the task of assisting in the establishment of stable conditions, which the colonialists have destroyed, leaving behind them chaos and destruction, I have no doubt that you will take special care to protect the sanctity of places of worship and see that no damage is done to them."

THE OPERATION:- The whole operation was divided into three parts. The main assault on Goa was to be led by the 17th Division. The other two formations were assigned to Diu and Daman. The Indian operating forces crossed into the Portuguese held territory on the midnight of December 17/18. Announcing the commencement of the operations, the Defence Minister said: "Early this morning, the 17th Division of the Indian Army, with naval and air support, have moved into Goa at three points. The sole objective of the force is to help the people of Goa, following the collapse of the colonial administration due to local liberation movement. The Army Division has moved to impart stability to Goa and help the local people following failure of the colonial administration, its inability to maintain law and order, as also the Portuguese move to adopt scorched earth policy. Special police will follow the Army, as it fans out inside Goa. While the action is mainly a land operation, Naval and Air Forces will provide the necessary support and cover and take whatever action may be necessary to prevent the territory being used against us."

The operating force went into action at the first light on December 18, 1961. The 50th Para-Brigade moved in from the north. The 63rd Infantry Brigade spearheaded the central column. The third brigade was held in reserve. However, one battalion moved in from the south in feinting move to draw off the opposing troops. The ruse succeeded. The fact that Para-brigade had been committed, made the Portuguese believe that there would be airborne landings. They therefore, dispersed their men and armour. This proved fatal to them. Further, the Portuguese made the mistake of rating the Indian Army no better than their

ownelves. They awaited a frontal assault in strength. A small Indian unit did engage the Portuguese in this manner. However, a larger column moved on foot along a smugglers trail through the jungle and over the hills, carrying mortars and anti-tank guns and surprised the enemy in the rear. Unable to stand the surprise appearance of the Indian troops, the Portuguese began to retreat. As the Indian troops advanced deeper into the territory more open country became available to them. So rapid was the advance of the Indian troops that by the dusk of the same day they were at Betim opposite Panjim. Here the force halted to avoid loss of life and property, which would have been inevitable, if the entry had been made after dusk. An added advantage to the Indian operating force was that, by the same time the other column reached Ponda and advanced a little beyond it. The third column moved slowly upto a point near Belli, some twenty miles within the border. On December 19, the First Para Battalion entered Panjim. The 63rd Brigade moved towards Marmagoa. The local garrison surrendered to the Indian forces that entered the capital. However, the Portuguese Governor and the Commander-in-Chief, along with the main body of his men, retired to Marmagoa and hoped to make a stand within a small perimeter encompassing the port and the airport at Dabolim. A column of 53rd Brigade reached Marmagoa. The Commander called upon the Portuguese Governor General to surrender as his men were in no position to offer military resistance. The Portuguese Governor General expressed his inability to comply with the demand on certain technical grounds, and was allowed some more time to think. It was at 10 A.M. the same night that the Portuguese Governor General handed over a statement which read; **'Governor General and Commander-Chief of the forces and Armada of Estdo Portuguese India, hereby render unconditional surrender of all forces in Goa'.**

Operations in Goa, were swift and a nappy. However, they were still more so in the case of Diu and Daman. The only difference was that the operation in Goa were conducted by the Army, whereas, it was the Navy which played the decisive role in the case of Diu and Daman. The pivotal role in the fall of Diu was played by **INS DELHI**, the former Flagship of the Indian Navy. This was followed by the capture of Anjadev. Giving an account of the Naval operations which led to the capture of Anjadev, the Authority said: **'The island was taken by the landing parties belonging to the Flagship INS MYSORE and the Frigate INS TRISHUL. Immediately after the dawn on December 18, seeing a white flag hoisted on the island, a landing party, including some officers drawn from these two ships, effected a landing on one side of Anjadev. The moment they set foot on the Island, the Portuguese troops manning the fortifications and hidden behind bushes, suddenly opened heavy gunfire. However, before this gunfire could have an adverse effect on the operations, INS TRISHUL closed in and opened bombardment of the strongly fortified part of the island. It was not long after that the garrison surrendered and the Indians took control of the Island'.**

PRIME MINISTER'S PRAISE:- The operations in Goa, though purely in the nature of a police action, were the very first against a European military power. There were wide-spread fears in the country that the operation would be hard, long and drawn out and would, perhaps, lead to international complications. The brilliantly successful planning and conduct of the operations defied and defeated all the fears. The operations turned out to be the shortest and the swiftest. They did not permit the interested powers, if there were any, even to think much less to act. The victories scored by the Indian operating forces

served as a major morale booster in the country. Speaking to Newsmen in Delhi, Prime Minister Nehru said, "The most significant points in the operations have been the extraordinary light casualties on both sides. Some casualties took place . . . wounded . . . when our side went to Anjadev. This was because of the deception practised by the Portuguese. They put up the white flag with the sole objective of drawing in the Indian force and then use the territory as a killing ground. There were some casualties in Daman and Diu. Secondly, when the Indian Army Units entered the Goan territory, they found that the roads had been mined and ditches cut across them. They could not take any vehicles until these roads were cleared and repaired. The men, however, marched on foot, the vehicles following after the repair of the roads. Both the officers and men marched about twenty miles on foot, many of them carrying heavy equipment while marching. All this was very creditable to the Army and showed their toughness of body and mind." In a message to the Commander of operating forces Prime Minister said: 'You and officers and men serving under your command in Goa operations have my warmest congratulations on the splendid way all of you have carried out the allotted task . . . with efficiency, courtesy and humanity.'

THE MIZOS

THE last in the process of national integration to require the employment of troops were the Mizos . . . a tribal people inhabiting the strategic mountain ranges of the Mizo Hills in Assam. Their demand was in the image of the Nagas . . . an independent homeland of their own. Like the Nagas, they also had outside inspiration and instigation and offers for the supply of military hardware. However, they were numerically a smaller section of the Indian people than the Nagas. They also did not have the same measure of war-time experience as the Nagas had. They were also not organised in the military way as the Nagas were. However, they also threatened an armed struggle if their demand was not conceded.

THE MIZO INITIATIVE:- Initially, the strength of the Mizo hostiles, who were feared to have received considerable training in guerrilla warfare and military hardware, most suitable to this type of warfare, from China and Pakistan, was estimated to be 10,000 strong. Their main operational base was feared to be in East Pakistan (now Bangladesh) where a clandestine radio transmitter was also claimed to be operating on their behalf. Later, however, the Government of India put the figure of the Mizo hostiles at about 1,300, not very much organised in a military way, but operating under the overall control and direction of the extremist **Mizo National Council**. The Mizo hostile activity opened with their assault on the sub-treasury at Lungleh. Their violent and lawless activity later spread to other centres of the District. Soon, they had the entire district, except the city of Aijal, under their control. The main objective of the Mizo hostiles was to disrupt communications in the area and terrorise the public servants to line up with them. Their capabilities in this particular regard appeared to be considerable.

GOVERNMENT OF INDIA REACTION:- In the initial stages, the Assam Government reacted by declaring the entire district as a disturbed area and extending to it the **Armed Forces (Assam and Manipur) Special Forces Act of 1958**. With immediate effect, the Government of India moved troops to aid

the civil authority. The first task of the troops so deployed was to provide relief to the posts and positions under the occupation or under pressure of the Mizo hostiles. Their second move was to isolate the Mizo hostiles from the general populace and deny to them the possibilities of using the populace as an instrument for local supplies, local operational support and intelligence gathering facilities. This could be done only by rebuilding law and order and by restoring faith and confidence of the people. According to the official statements, the advancing Indian troops first encamped at Aijal and later fanned out into the disturbed areas. The Mizo resistance was feeble. The Indian troops were in a position to clear the hostiles from the entire town. The Indian troops were later split into two smaller elements which moved further south towards Lungleh and south-west towards Champai. Successfully overcoming whatever resistance the Mizo hostiles could put up en route, the south bound column reached Lungleh and the south-east bound column reached Champai. This marked the end of active military operations. The Indian troops were immediately assigned the task of restoring law and order, winning over the confidence of the people and lifting their morale. Once again the Indian troops were triumphant. They had more than justified their existence as a patriotic force irrevocably wedded to the task of national integration.

LATEST POSITION:- Reporting at the end of 1971, the Ministry of Defence stated that a number of misguided Mizos who took up arms against the country and sought refuge in East Pakistan (now Bangladesh) have regretted their action and are now eager to rejoin their families in the Mizo hills District (now Union Territory of Mizoram) to resume normal lives and settle down in peace. The Government have, therefore, decided to give a fresh opportunity to such Mizos to come back and settle down as law abiding citizens. A liberalised declaration of amnesty for Mizo rebels who wish to surrender was made by the Government of Assam on 16th August, 1971. Under this amnesty, all such Mizos who surrender to the nearest Police, Military or Assam Rifles outposts are granted pardon for the offences committed by them against State, and are, in addition, given a cash grant of Rs. 100/- each to assist them in settling down. Those Mizos who surrender with arms are given additional cash grants for the arms and ammunition surrendered by them. While surrendering, the persons concerned are required to take an oath of loyalty to the country and the Constitution of India. The declaration of amnesty was in the first instance effective upto 15 December, 1971; it was later extended upto 15th January, 1972. After the declaration of amnesty, 17 Mizo hostiles surrendered to the Security Forces. Of these 17, 14 were officials of the Mizo underground government, including the "Foreign Minister", "Finance Minister" and the "Minister of Supply". The sustained operations by the Security Forces and differences among the top leaders of the Mizo National Front have considerably reduced the activities of the extremists, and have brought about near normal conditions in the Mizo Hills District (now the Union territory of Mizoram). The estimated strength of the Mizo hostiles residing in Bangladesh before its liberation was 1296. These rebels were being trained by the Pakistan Army authorities and utilised for organising raids and violent activities in Tripura and in operations against Bangladesh freedom fighters. With the liberation of Bangladesh, most of these rebels have surrendered except for a few who have crossed over to Burma. During the operations of the Security Forces in 1971, 40 hostile Mizos were captured, 30 surrendered and 2 were killed; 20 weapons which included sten guns, rifles, pistols and non-Service pattern weapons were also recovered.

GOVERNMENT ELECTRIC FACTORY

(State owned undertaking, Department of Industries and Commerce

Estd. 1933

P.B. No. 2610, Mysore Road, Bangalore-26.

Grams: 'GEF' Bangalore.

Phone: 24162....24163.

PIONEERS IN

The manufacture and supply of Power and Distribution Transformers ranging from 25 Kva to 1000 Kva with working voltage upto 11 Kv to all the Electricity Boards in the country for over 30 years.

THE OTHER LINES OF MANUFACTURE ARE :—

- Survey and Mathematical Instruments required for public Works Departments, Survey Departments, Technical Institutes etc.
- Industrial Plastic Mouldings (Injection compression types).
- Electric Motor Pump Sets of 3 HP and 5 HP, capacities for Agricultural purposes.
- 3 tons and 5 tons capacity Trailers for tractors for Agricultural purposes.
- Electric Fans.
- 48" Ceiling Fans
- 36" Ceiling Fans
- 16" Table Fans.

In Technical Collaboration with
M/s| D. S. Industrial Corporation,
Calcutta.

In deep appreciation of

**SOLDIERS AND SOLDIERING FOR FREE-
DOM, PEACE AND ORDERLY PROGRESS
OF MANKIND AS EXAMPLIFIED BY OUR
GALLANT ARMED FORCES.**

UDAY TRADING CORPORATION

247, NAGDEVI STREET, BOMBAY-3.

* STOCKISTS AND SUPPLIERS OF
BALL & ROLLER BEARINGS.

PHONE 328734.

To enable the civil administration and the Army to carry out their tasks effectively, and to offer the maximum possible protection to patriotic Mizos, a programme for grouping of villages was planned. The implementation of the last phase of the grouping scheme, has, however, been suspended due to the issue of a stay order by the High Court of Assam and Nagaland. The grouping operations carried out so far have enabled the civil authorities to distribute essential supplies much more systematically than before, ensure adequate food supplies to all the residents of the group centres and provide the Mizo population with all amenities of modern life, like schools, hospitals etc. Such grouping has made it nearly impossible for the hostiles to extract food, money and other essential goods from the patriotic Mizos.

FOR WORLD PEACE

AT the international level, the fundamental of the Government of India policy on the use of Armed Forces emerged to be at the service of the United Nations and therefore, in the furtherance of world peace and orderly progress of mankind. During the past twenty five years that India has been free, Indian Armed Forces, committed to this task, have served in Korea, United Arab Republic, Indo-China and the Congo. Their performance during all these commitments has earned for them the praise and admiration of warring factions in the countries concerned, the United Nations and the Government and the people of their own country. Actually it is their performance in these commitments which has given true content and meaning to the new terminology now being used 'soldiers and soldiering for peace.'

KOREA

FIGHTING in Korea was the first post-war near world war disaster. It originated with the North and the South Koreans who had their associations with the two political systems . . . the communist and the democratic . . . struggling for supremacy. It, therefore, soon acquired direct|indirect participation of such military giants as the Soviet Union, China, the United States and some other UN member countries. China ultimately dominated the scene on behalf of the North Koreans and the United States of America, acting as the leader of the UN forces, took up the cause from the other side. Militarily, the fighting in Korea conferred no advantages to any side. Peace was once again established at the original 17th parallel. The conflict, however, was of major importance to India because it gave her first opportunity to throw her entire diplomatic and military weight on the side of enduring peace in the region.

INDIAN RESPONSIBILITIES:- Under the Prisoners of War Agreement, India was asked to undertake certain special responsibilities. Besides, being one of the members of the Five Nation Commission, she was designated as the **Chairman and the Executive Agent of the Commission and also the Umpire in accordance with the provisions of Article 132 of the Geneva Convention.** The armed forces and other personnel required to assist the Commission were also to be provided by India exclusively. The Commission constituted itself on

September 3, 1953. The honour of being its Chairman and Executive Agent went to then Lt. General K. S. Thimaya. It was essentially a diplomat's job which the General was called upon to carry out. The 190th. Brigade, consisting of five battalions, with a detachment of the Mahar Regiment and Signal, Engineer and Medical Units constituted the Custodian Force under the command of Major General P. S. P. Thorat.

INDIAN PERFORMANCE:- UN authorities themselves conceded that circumstances in Korea were extremely difficult and delicate. The main difficulty and the main danger to the performance of the duties by the Indian troops was that, in the initial stages **President Syngman Rhee of South Korea** was bitterly opposed to the stationing of Indian Custodian Force. On several occasions he threatened to fight. It was only after the US assumed the direct responsibility of the safety of the Indian troops, that the force settled down to the business. The first task that the Indian troops undertook was the setting up of 5,000 mile long wireless link with New Delhi. This in itself was a remarkable feat and immediately earned the praise and admiration of the UN authorities and the Government of India. Later, acting as the teeth and claws of the Commission, the Indian Custodian Force took charge of 22,600 UN Command Prisoners (14,700 Chinese and 7,900 North Koreans) and 360 K.P.A. and C.P.V. Command Prisoners, (335 South Koreans and 23 Americans). The custody of the prisoners in the demilitarised zone meant day and night vigil. A task, more difficult than this vigil, was to deal with the recalcitrants among the prisoners. This required great tact and skill, particularly in the face of provocations which were not infrequent. Lack of agreement between the two commands on the extension of the explanation period, disposition of non-repatriable prisoners and the continuance of N.N.R.C. and the Custodian Force, incapacitated the Commission from proceeding with the task as originally designed and desired. The only course left open under the circumstances was to return the bulk of the unrepatribable prisoners to the former retaining sides. Thus, successful in implementing the procedures, to a limited extent only, the N.N.R.C. whose members had worked together with a singleness of purpose for eight long months, dissolved itself. As a result of the dissolution of the N.N.R.C., the Indian Contingent returned home. **The returning force was given enthusiastic reception. General Thimaya, in recognition of the 'outstanding services rendered to the cause of world peace' was awarded Padma Vibhushan (Dusra Varg).**

INDO-CHINA

THE Truce Agreement at the Geneva Conference ended the hostilities, in Indo-China. It also ended the French sovereignty in the region. In order to establish enduring peace in the region, the UN set up three International Commissions for Supervision and Control. These commissions, were based at Hanoi, Saigon (Vietnam), Vietiane (Laos) and Pnom-Penh (Cambodia).

INDIAN CONTRIBUTION:- India was appointed the Chairman of the Commissions, which had Canada and Poland as the other members. Unlike Korea, the Commissions were headed by civilians. However, high ranking military officers were provided as Alternatives Delegates, who occasionally acted as Chairman and assumed the responsibilities of even political decisions.

India, in discharge of her duties, provided all the administrative arrangements and also some seven hundred officers and men to constitute, along with the Canadians and Poles, the static and mobile team of inspection. The responsibilities assigned to the Commissions were: (a) **Observation of the Cease-fire Line along the 17th. Parallel.** (b) **Prevention of reinforcements by either side.** (c) **Regrouping of all forces . . . French and belligerents . . . in their allocated areas and to ensure against resumption of hostilities.** (d) **Free movement of people from and to the territories held by either of the contesting parties.** (e) **Peaceful transfer of power by the French and** (f) **Holding of free and fair elections in the three states to bring about unification.**

LATEST POSITION:- Reporting at the end of 1971, the Ministry of Defence stated that since 1954, Indian Armed Forces contingents have been supervising the observance of the cease-fire in Indo-China and despite various difficulties, have been honouring the obligatory duties arising out of India's membership of the International Commissions, for Supervision and Control in Indo-China. Due to financial difficulties and the conditions prevailing in that area, the activities of the Commission have been curtailed and the bulk of our contingents were repatriated in 1968, 1969 and 1970. At present, our personnel are working with the Control Commissions in Vietnam and Laos. The Chairman of both these commissions are assisted by an Alternative Delegate who is an Army Officer of the rank of a Brigadier.

GAZA (UNITED ARAB REPUBLIC)

IN explosive situation developed when Anglo-French forces spearheaded by the Armed Forces of Israel invaded Egypt. Fortunately, immediate and effective intervention by the United Nations brought the hostilities to an end before much damage could be done to peace in the area. In order to bring about the withdrawal of the invading forces and to prepare the ground for peaceful settlement of the dispute, the UN set up an International Police Force. This Police Force, the very first of its kind set up by UN, was not the one which had fought in Korea or the type of police force which was used by the British and the French already. The function of the force was to enter the Egyptian territory with the consent of Egyptian Government. Its task was to help maintain quiet during and after the withdrawal of the non-Egyptian troops, to secure compliance of the UN resolution on the subject. It had no powers other than those necessary for the execution of its functions in co-operation with local authorities.

INDIAN CONTRIBUTION:- India after seeking certain clarifications undertook to provide the entire force necessary for the peace keeping operation. Beginning with the stationing of the **3rd Battalion of the Parachute Regiment**, all the replacement later carried out yearly, were drawn from the senior most formations of the Indian Army, having already won a vast variety of outstanding decorations and battle honours. During the course of the 'peace keeping operations', Indian officers and men rendered themselves to all, earned the highest decorations and held the highest command posts ever granted to peace keeping forces. It was on account of the behaviour and performance of the Indian officers and men that Indo-UAR relations became the friendliest aid they contributed so significantly to the extension of the areas of peace.

IN

*THE SERVICE OF
OUR ARMED FORCES*

WHO

*HAVE SERVED THE
COUNTRY BEST*



**MAC LABORATORIES
PRIVATE LIMITED**

KIROL, BOMBAY-86 AS.



BRANCHES & DISTRIBUTORS

AT :

BOMBAY-DELHI-JABALPUR-CALCUTTA-RAJVOT

CUTTACK-GAUHATI-PATNA-VIJAYAWADA

BANGALORE-MADRAS-COCHIN-JAIPUR.

THE CONGO

IN the middle of 1960, trouble developed in Congo. In discharge of its international obligations the Security Council passed a three point resolution. This resolution was passed with the prior approval of the Afro-Asian nations. India was associated with the resolution right from the drafting stage. Having been in full agreement with the resolution, India agreed to place at the disposal of the United Nations Emergency Force a composite unit of 5,000 officers and men. Of these 2,885 were combatants. The rest were the personnel from Signals, maintenance of ground equipment and medical aid. The force was the largest single unit ever placed under the command of the UN for any peace keeping operation. During, 1961, when situation deteriorated further, an Independent Infantry Brigade Group was sent. This Brigade Group returned to India in 1963 and the auxiliary units were repatriated a little later, when the UN Force in the Congo was finally wound up.

THE UNDECLARED WARS.

COMMUNIST CHINA

WHATEVER the extent and magnitude of the military threats posed by Pakistan, even after receiving massive military aid from the United States of America, Pakistan was never taken seriously in India. The capabilities of Indian Armed Forces to crush and kill Pakistani threats were never in doubt. There were some fears of international complications when the police action against the Portuguese in Goa was launched. However, these were all defied and defeated and Indian Armed Forces were able to accomplish the task with perfection, within record time and without permitting any international complications to arise. However, it was the massive, monstrous, unprovoked and undeclared military aggression launched by Communist China in October, 1962 which imposed upon the Indian Armed Forces the greatest and severest challenge of their entire life time. The reverses suffered by the Indian Armed Forces converted NEFA and Ladakh into a graveyard of Indian military renown and caused most serious ever rethinking on politico-military policies till then followed by India.

THE WAR OF FIRSTS:- Despite the fact that Communist China had accepted the principle of peaceful co-existence as enshrined in **Panchsheel** she had not given up hate India campaign. Sheltering behind this thick and impenetrable smoke screen of propaganda at home and taking full advantage of Hindi-Chini Bhai Bhai wave in India. Communist China had also moved into Tibet without raising any active hostility in India. Communist China then followed up the uncontested victory in Tibet by "inching forward" pressing claim after claim on India ultimately, she came up with her fantastic claims in NEFA and Ladakh. Having found India unbending and unyielding, Communist China moved her armed forces and confronted India with warlike situation which had to its credit or discredit

several firsts. The most important firsts which caught headlines in the world press and rocked and shocked the world opinion were: (a) The war was not formally declared and the military action was not preceded by any ultimatum or severing of diplomatic relations between the two countries. (b) The war was the very first between a communist country and a newly independent country which was not allied to any power block and whose policies were almost wholly socialist in content. They were in fact perennial support to the freedom movements in all the countries still creaking under western imperialist stranglehold. (c) It was the very first armed conflict between the major signatories of Panchsheel, irrevocably committed to peaceful co-existence and settlement of all disputes by peaceful means. (d) It was the first post-war conflict which was hailed and acclaimed in the United States of America and her allies in Europe as a stunning vindication of their view point that Communist countries were really imperialistic and Asian domination was their sole objective. The conflict was utilised by them to impress upon India the futility of the neutralist policy and the advisability of lining up with the forces of freedom and democracy as represented by United States of America and her allies in the western world. (e) This was the very first post-war conflict which was neither condemned nor condoned by the Soviet Union . . . the leader of the socialist world and crusader against all forms of imperialism, colonialism, etc. The Soviet attitude remained apparently indecisive but in reality it was influenced in favour of China as 'between brothers and friends'. Soviets made no secret of the fact that despite the massive, monstrous military aggression, they still considered the Chinese as their brothers and Indians as their 'mere friends.' (f) Finally, this was the very first war in which the Indian military renown built with the life and blood of countless soldiers sons in several hundred years, was put in the reverse gear. Never, before in their entire history had they suffered such damaging defeats and in such a short time. The theatre of operations ultimately emerged as the graveyard of Indian military renown, brought about the sharpest ever decline in civil and military morale and caused the deepest ever rethinking on the future of politico-military policies.

CHINESE MILITARY BUILD-UP:- The best of military experts in the free world had till then not been able to fix with precision the size and scale of military build up in Communist China. Generally, the military build up in all communist countries had been on the basis of **'every man a soldier and the entire nation an army'**—Politico-military experts in the free world were inclined to think that this dictum had been pushed to its very extreme limits in Communist China. It was generally conceded that, on the eve of the assault on India, the Communist China had the largest body of armed forces in the world. Some had gone to contend that they were larger than all other armed forces of the world put together. Going by numerical figures, then available to the outside world, Communist China at this juncture, was claimed to have four and half million regulars. The regular forces were divided into Combat Units, the Specialists and the Experts. Their military hardware, mostly of Russian origin, was more modern, sophisticated and lethal than the military hardware with the armed forces of the other Asian and African countries. Communist China also had a formidable force of 7,000 aircraft which included 3,000 fighter interceptors, 1,000 jet bombers and a number of transport aircraft, reconnaissance planes and helicopters. The Navy, small in size though, still had about 340 ships of various types. The most menacing thing about the Chinese Navy at this stage was the force of 28 long-range ocean-going, conventional submarines. At the back of this mighty force was the Mao's pet militia, the numerical strength of

which ran into astronomical figure of 245 millions. The entire force was claimed to be fully trained to wage conventional war in all parts of the world and under all climatic and terrain conditions. This force was claimed to be particularly adapted to guerrilla warfare of the most modern concept. Actually, the Chinese at this stage were considered as the original authors and architects of the theory and practice of guerrilla warfare.

CHINESE OBJECTIVES:- Immediately, the Chinese objective appeared to be some 90,000 kilometer area lying within India and claimed to be an integral part of Chinese Tibetan territory. To substantiate their claims, the Chinese denounced the **McMohan Line**, as the natural, normal and traditional frontier line between China and India. They proclaimed it to the world that, no Chinese Government had accepted this line and the present Government was certainly not prepared to accept and recognise it. The Chinese also asserted that for them Kashmir-Tibet Treaty, of 1943, these Simla Conference of 1944 and any other Agreement or Treaty, to which their present day Government was not a party, had no validity. They characterised that Indian claim that the territory in dispute had been associated with India's history, culture and traditions, was an utter and absolute lie, an affront and insult to China and a shameless continuation of India's imperialist policy. On the contrary, the Chinese claimed, that there was enough convincing historical data available to prove that these regions had always been under the control of the Chinese Tibetan authorities and there were distinct and definite cultural, social, religious and every other conceivable affinities between the people of Chinese Tibet and the people in the areas under Indian occupation.

The above was strictly military objective and the immediate cause of military action against India. However, according to late **Lt. General B. N. Kaul**, the Indian Corps Commander and the author of the book 'THE UNTOLD STORY', the Chinese had several other objectives of political nature. According to him: (a) **Communist China** wanted to establish herself as one of the great powers of the world. She also wanted to utilise the situation to serve as a warning to Russia and the United States of America that, Asia, where China was the strongest power, belonged to her sphere of influence. (b) China wanted to impress upon the countries of Asia, particularly Nepal, Burma, Ceylon and Cambodia and the Indian protectorates, Sikkim and Bhutan, that she was mighty and irresistible military power and that it would be to their good and advantage to keep themselves away from India and prefer Chinese benevolent cover. (c) China also wanted to impress upon these countries the absolute superiority of her socio-political system which, if extended, could bring utopia of 'socialism' on earth. (d) Communist China wanted to demonstrate to Soviet Russia that, India's much trumpeted policy of non-alignment and non-involvement was a mere myth. India was in reality a stooge of western imperialism led by the United States of America and the military action will unmask the real Indian mind. (e) China wanted to humiliate India which was posing herself as rival in the field of ideological, political and economic fields and actually threatening to take over Asian leadership. (f) Although, under the Chinese occupation, Tibet was still seething with discontent and making overtures for outside, particularly Indian help, to liberate herself from the bondage. China wanted to teach a lesson to the Tibetan people that a weak country like India could give them no material help and protection against a strong country. (g) Finally, China wanted to divert the attention of her own people from internal difficulties and

utilise the victories against India as a new unifying slogan and morale boosting element.

THE MASSIVE INVASION:- With the day break on October 20, 1962 . . . the day of her own revolution. Communist China launched her military aggression without any formal declaration whatsoever. With absolute superiority in numbers, armament and other supporting elements, with troops specially trained to wage regular and irregular warfare in the climate and terrain in the region, and employing their traditional human wave tactics. Communist China launched a simultaneous assault all along the frontier line. So great was the intensity of the assault that, within hours the entire frontier on the Indian side stood pierced, punctured and penetrated. Post after post held by the Indian troops fell in lightning rapidity. Advancing, assaulting, outflanking and enveloping even the most strongly held Indian positions, the Chinese seemed to be putting into mere insignificance the German advance into Poland and other Lowland countries of Europe during World War II—Communist Chinese forces covered the distances to their immediate military objective within a record period of thirty days. This they did, despite about ten days comparative lull in between. Even Prime Minister Nehru had to concede that 'India had suffered a staggering military defeat.'

INDIAN DEFENSIVE MEASURES:- Immediately after the outbreak of hostilities a state of emergency was declared throughout the country. In order to mobilise fully the moral, material and physical resources of the entire country, the National Defence Council with the Prime Minister as the chairman was formed. The functions of the Council were declared to be: (a) Take stock of the situation, make arrangements for national defence and advise the Government on Defence and related matters. (b) Assist in building up and suitably guide the national will to fight the aggressor and (c) Utilise public participation in national defence effort to the very maximum extent possible under the circumstances. The council later formed the Ministry Affairs Committee with the Union Defence Minister as the Chairman and another Committee with the Home Minister as the Chairman. The task of the former was to take stock of the defence arrangements while the task of later was to assist in building up the national will against aggression, by reaching the remotest corner of the country.

Immediately after the outbreak of hostilities and having realised the serious and severe shortages in weapons, defence stores and equipment and national production capacity thereof, the Government of India addressed urgent appeals to all friendly countries for help to meet the sudden attack. Although, the general opinion in the country was not favourable, the United States of America moved first to help India. The Government of India conceded that even before the masses of people in the country knew that such appeals had been addressed to the friendly countries, the United States of America had moved to full speed and capacity. Her aid machinery was pressed into action with the fastest means of delivery to enable the supplies to reach India without even a minute of unnecessary waste. The next country to move with speed approximating the US was Great Britain. Other countries which also moved to help India were Australia, Canada, France, Italy, New Zealand, Rhodesia and West Germany. There was, however, no response from the Soviet Union or any other country belonging to the Communist World.

THE CEASE-FIRE:- In India, as also in the entire non-communist countries, there were widespread fears that the triumphant Chinese troops would not stop at their immediate gains. On the contrary, they would launch deep and more extensive and intensive thrusts into the Indian territory menacing thereby the very existence of the stable government and then utilise the situation for a 'communist type revolution'. This was clearly evident from the statement that Prime Minister Nehru made before a tense and anxious Parliament. The Prime Minister, choked with emotions, said: 'A Chinese column, several thousands strong, had secretly crossed the mountain ranges and had outflanked the Indian defensive positions. Walong, Bondi La and Se La had fallen. The enemy was only a hundred miles away from the plains of Assam. In Walong, Chusul was in grave danger. The threat may assume any extent and intensity at any time'. However, Communist China surprised the entire world by declaring unilateral cease-fire once the area claimed by her was under her occupation. A Peking Government announcement, made earlier in the day on November 20, 1962, said the Chinese troops would cease-fire all along the India-China border from midnight the same day. It further added that beginning from December 1, 1962, the Chinese Frontier Guards will withdraw to positions from 20 kilometers (twelve and a half miles) behind the line of actual control, which existed between India and China on November 7, 1959. However, this cease-fire and withdrawal was made conditional upon several eventualities. The Chinese declared that they would reserve the right of reversing their own decision if the Indian troops should continue their attack after the Chinese Frontier Guards have ceased-fire and when they are withdrawing. After the Chinese Frontier Guards have withdrawn from the entire line of actual control if Indian troops, again advance to the line of actual control in the middle and the western sectors and try to recover the positions prior to September, 1959, that is to say, they again cross Keilang River area north of the line in the western sector reoccupy the Muje in the middle sector and restore that 43 strong points for aggression in the Chip Chap River Valley Area or set up more strong points of aggression on the Chinese territory in western sector.

CEASE-FIRE AND AFTER:- Initially, the cease-fire, unilaterally announced by Communist China, was received in India as a huge trickery, the worst form of dictated peace and a calculated bid to gain time to consolidate the fruits of aggression. In the words of Authority in India, the cease-fire and offer of talks after a massive aggression and acquisition of chunks of Indian territory, was a grand gesture to negotiate on what was left, while retaining the gains of aggression. The attitude of the Government of India to these suggestions was simple and straightforward. According to the Government the Chinese activity since 1957, culminating in the latest massive invasion, was a cause enough to disbelieve and Chinese professionals of their peaceful intent. The Government of India were, nevertheless, prepared to discuss the question with China, only if the latest aggression was vacated by them. This was the general trend of thinking in India. However, no attempt was made to investigate if the Chinese had any other ulterior motives in the most unusual step taken by them. This analysis and investigation was for the first time attempted by Lt. General B. M. Kaul. According to the General: (a) Communist China expected that India would crack, if not collapse, under the weight of military assault and would sue for peace of the Chinese design and concept. Unfortunately, this did not happen. Communist China was, therefore, confronted with the grim prospect of a prolonged struggle of ever mounting intensity. (b) Any deeper advance into India would pitch the Chinese forces against the hard core of the Indian Army

**QUALIFY
yourself**



If you are not holding qualifications for the trade in which you are working
ITES holds qualifying Certificate Examination in

- Radio Servicing, Advanced Radio Servicing, Radio Apprentice
- Wireman Apprentice & Electrician
- Armature & Motor Rewinding
- Mechanical Draughtsman etc. etc.

Courses in November/May each year

Forms and fees for admission to Nov and May Examinations have to be received before 10th Aug. & 10th Feb. each year.

INDIAN TECHNICAL EDUCATION SOCIETY

394, Dr. D. H. Bhadkamkar Road,
Lamington Chambers,
BOMBAY - 4.

WITH BEST COMPLIMENTS FROM :

**RAVINDRA
COMMERCIAL COMPANY**

EMPIRE HOUSE, 3RD FLOOR,
D. N. ROAD, BOMBAY-1.

DISTRIBUTORS FOR
**ANDHRA PRADESH
PAPER MILLS LIMITED
&
WEST COAST
PAPER MILLS LIMITED**

in the plains where the Indian soldier enjoyed distinct superiority over other soldiers, including those of Communist China. It would also cause the difficulties of maintaining long lines of supply and communication through the most cruel and treacherous mountain terrain known. (c) Any prolonged struggle would inevitably bring about physical intervention by outside power, particularly the United States of America. On her own, Communist China would not be able to stand such a situation. (d) Prior to her military assault, Communist China had not taken Soviet Union and other communist countries into her confidence. Communist China could, therefore, not expect physical intervention by Soviet Union and other socialist countries in the event of the conflict escalating into a wider conflagration as a result of US direct or indirect participation from the Indian side.

CONSEQUENCES IN INDIA:- Officially, India did not accept the 'cease-fire' and the so-called voluntary withdrawal of the Chinese troops to new positions of their own choosing. However, fighting came to an end. Consequent upon the damaging reverses suffered by the Indian troops, a wave of anger and indignation swept the entire length and breadth of the country. Reactions inside the armed forces were not immediately known. However, at the civilian level there were angry outburst that the Government of India had deliberately permitted their so-called 'peace policy' to make deep dent into the military policy. Whatever the size and strength of the armed forces, their military hardware, their training and combat capabilities against a major power like China had been permitted to remain at low level.

THE ENQUIRY:- During the course of the hostilities, the Government of India had admitted that Indian operating troops were vastly inferior to the Chinese in weapons, armament, equipment and training in the type of warfare that was imposed on them. Speaking on the subject, Prime Minister Nehru said, 'We have been vastly outmatched in numbers, armament, equipment and everything else. We have suffered extreme logistic troubles . . . in many cases insurmountable we have suffered grievous defeats at the hands of the enemy'. However, immediately after the close of the fighting and in response to pressing demand from all sections of the national life, the Government of India appointed an Enquiry Committee under the Chairmanship of **Lt. General Henderson Brooks**. In view of the very close relationship of the operations in NEFA and Ladakh, the Committee was asked to study the entire operations on the northern borders, particularly examining the question of training of the troops, armament and equipment, system of command, physical fitness of the troops and the capacity of the commanders at all levels to influence men under their command.

The enquiry was duly completed and the report was claimed to be truly historic document full of objective lessons. However the Government, by virtue of the very contents of the Report, did not think in public interest to publish it. The Government did not even attempt an abridged or edited version of the Report, consistent with security considerations. The Government thought that publication of even an abridged version would produce an unbalanced and incomplete picture of the situation and, as such, would be open to gross misunderstandings and misinterpretations. Above all containing vital information about the strength and deployment of Indian troops, the publication would be of greater use to the enemy. As such, it will seriously endanger national security, adversely effect morale of those entrusted with the safeguarding of the borders. However, the Government made the following observations:

(a) In the matter of weapons, the enquiry has revealed that our basic training was sound. However, it had not been orientated to operations in the terrain in which our troops had to operate. Our troops did not have a slant for the type of warfare which was launched by China. While emphasising the need for further toughening and battle inoculation, the enquiry has revealed that the main aspect of training, as well as the commander's concept of mountain warfare, required to be put right. In regard to equipment, the enquiry has revealed that, there was indeed an overall shortage of equipment, both for training as well as during the operations. The position was further aggravated by logistic problems. (b) In the matter of weapons, the enquiry has revealed that our weapons were adequate to fight the Chinese and compared favourably with theirs. (c) In regard to system of command, the enquiry has revealed that there was nothing basically wrong with the system and the chain of command. The enquiry has revealed that during the operations, difficulties arose only when there was a departure from the accepted chain of Command. The enquiry has also revealed the practice that had crept in the higher Army Formations to interfere in tactical details even to the extent of detailing troops for specified tasks. The fact that the duty of the commanders on the field was to make on the spot decisions and details of the operations was not their concern, was not given its proper care. (d) About physical fitness of our troops, the enquiry has revealed that, unacclimatised army could not have done better. (e) In regard to the capacity of the commanders at all levels to influence the men under their command, by and large, the general standard among the junior officers was fair. It was the higher level that the shortcomings were found more apparent. (f) Apart from this, the enquiry has gone into the aspects of intelligence, staff work and procedures and higher direction of operations. The enquiry has admitted that the collection of intelligence in general was not satisfactory . . . the acquisition was slow and reporting vague. This has left no doubt that the intelligence system requires major overhauling. In regard to staff work and procedures, the enquiry has admitted that much more attention should have been given to the work and procedures of the General Staff at the Services Headquarters, as well as at the Command Headquarters and below, to long term operation planning, including Logistics, as well as the problems of co-ordination between various Services Headquarters. The enquiry has emphasised that the ability of the General Staff work and the depth of its prior planning must be crucial in our future preparedness. In regard to the crucial questions of higher direction of operations, it is the policy, guidance and direction issued by the Government which have been considered vital and decisive.

Immediately, there was nobody from the Services to command upon the deficiencies and discrepancies in the organisation, administration, armament and system of field deployment. It was only after his retirement from service that Lt. General B. M. Kaul, in his book 'The Untold Story' brought to light certain tangible defects, discrepancies and shortcomings which were responsible for the Indian disaster. According to him:

(a) Although the Indian and Chinese armies had been confronting each other for some months with possibilities of war between them, little attempt had been made in the Indian Army at any level to study seriously or practice the Chinese tactics and how to counteract them, nor to understand their political and military behaviour. (b) There was a tragic lack of inter-Service co-ordination. (c) The Government had not taken the extraordinary steps in time to strengthen the Armed Forces in order to cope with this grave situation. (d) When

the hostilities came, organisation and establishment of the Indian Army was found wholly unsuited in weapons, equipment and logistics for mountain warfare. (e) Whereas the Chinese forces in the area had been there for a long time and had been fully acclimatised the bulk of the Indian forces were inducted and had been fully acclimatised, the bulk of the Indian force were not acclimatised for operating at high altitudes. The hasty concentration had resulted in officers and men arriving in the operational areas, physically unfit and mentally unprepared for the task ahead of them. (f) The Indian intelligence system compared most unfavourably with that of the enemy. As a result of their superiority in intelligence gathering, the Chinese often knew about the Indian military build up and plans much in advance. (g) The Chinese troops could move lightly by night, and hence, had greater mobility. They could also adopt many ruses, including bird calls, Hindi words of command and use of Indian military uniforms. They could deceive the Indian troops by moving their troops in one direction during day and attacking them from another at night. They could surround the Indian troops in different localities from all sides, firing on them from various directions. Although, this fire was generally not well aimed, yet it could create confusion allowing the Chinese to break through and cause panic, as also diversion of Indian fire support. (h) Indian patrolling was generally ineffective and they were unable to capture any Chinese prisoner. There could, therefore, be no 'sampling study'. (i) The Chinese had deployed far greater fire power, automatic weapons and artillery than the Indians. They also had the edge in the essential items for the preparation of defence. Although they had truly efficient wireless communication system, they did not depend upon it wholly.

PRESENT POSITION:- Nearly ten years have passed. The Indian territory occupied by the Chinese during the military assault has since remained under their occupation. There has been no dialogue between the two countries for the peaceful settlement of the so called dispute. The Chinese have also not dismantled their heavy military build up in the region. Indian troops trained, equipped and battle inoculated in the light of the recommendation of the Enquiry Committee have, therefore remained deployed to prevent and further encroachment on the Indian territory. A new and highly dangerous element in the Chinese foreign policy after the military assault has been its all-out support to Pakistan, both in diplomatic and military way. Short of physical participation, the Chinese, during this period have done everything possible to strengthen the military machine of Pakistan and keep it poised against India. Reporting at the end of 1971, The Ministry of Defence have clearly stated that the development in the wake of the people of Bangla Desh fight for their national liberation have interrupted the movement to normalise relations with China. During the conflict, the Chinese chose to side with the Pakistani military junta. They opposed the liberation struggle. Instead, they supported the cause of territorial integrity of Pakistan. During the course of the conflict, there were military consultations between the two countries. With 100,000 troops already deployed in Tibet, there was much increased patrol activity from September, 1971 to January, 1972. In the Security Council and other forms of the United Nations, Chinese made every possible effort to strengthen Pakistan and to assail the standpoint of India and Bangladesh. A regular flow of arms to Pakistani arsenals has continued. The Chinese have since announced that the military hardware transferred to Pakistan earlier would be treated as a gift. The Chinese have not yet recognised Bangladesh and they have shown renewed interest in Jammu and Kashmir.

ALL HONOUR TO

OUR GALLANT ARMED FORCES
TRUE SOLDIERS IN THE CAUSE OF
FREEDOM, DEMOCRACY AND ORDERLY
PROGRESS OF ENTIRE MANKIND.....:
THE IDEAL AND OBJECTIVE OF OUR
MOTHERLAND

INDIA



**MAHARASHTRA
STEEL ROLLING &
ENGINEERING WORKS**

AGRA ROAD, BHANDUP, BOMBAY-78.

RR-ROLLERS, ENGI EERS, FABRICATORS,
C. I. AND BRASS FOUNDERS.

SPECIALISTS IN WINDOW SECTIONS

PHONE	OFFICE	: 378721
	WORKS	: 443441 - 592641
	RESIDENCE: LALCHAND AGARWAL	241593
	JAGDISHCHAVD	298762
	GRAMS	: "MAHASTEEL" BHANDUP

PAKISTAN'S FIRST TOTAL WAR

THE reverses suffered by Indian Armed Forces at the hands of the Chinese were most damaging and disastrous. There were many in the world at that time who had begun to think that Indian Armed Forces were no longer the 'Greatest warrior force ever created' of World War II. Instead, they had become grass armed forces whom any body could mow down. Soon after the end of hostilities against China, India suffered another major set back in the death of Pandit Jawaharlal Nehru, the giant of a man whose stature had risen much above others in the world and who enjoyed absolute faith and confidence of the Indian people. Instead, the burden of national responsibility had fallen on Lal Bahadur Shastri, who had yet to build up his status and stature and prove, if he could carry the nation to victory, if ever another military aggression came.

RANN OF KUTCH:- Pakistan had been looking forward to such a situation in India and exploit the same to give to her armed forces the taste of major victories which they had not known till that time and to justify the supply of military hardware from the United States of America and China, the new found friend and ally. Pakistan's main objective was of course Kashmir. However, Pakistan preceded the major military action by what was claimed to be 'laboratory test and Grand Rehearsal' in the Rann of Kutch in Gujarat. Laying claim to the entire Indian territory upto the 24th parallel Pakistan began with probing and pin-pricks operations. Having gained some success, Pakistan ultimately committed a full infantry brigade, supported with the so-called unkillable patton tanks and heavy artillery. With this superiority in arms and armour and logistic advantages in her favour, Pakistan did succeed in ousting the Indian troops from some of the comparatively weakly held positions. Pakistan projected these so-called reverses to the Indian troops as her major victories and a vindication of the claim that Pakistani armed forces were truly invincible and could stand a major trial of strength with India. Pakistani view point was shared by the top military brass in the Western countries, particularly in the United States of America.

KASHMIR AGAIN:- During the years and months that followed the cease-fire and the establishment of the cease-fire line, Pakistan had resorted to every conceivable means to keep alive the so-called problem of Kashmir. Pakistan had kept on presenting to the outside world as the major irritant bedeviling the relations between the two countries. Thousands indeed had been the cease-fire violations committed by the Pakistani armed forces and hundreds had been extremely provocative anti-Indian speeches delivered by Pakistani delegates at the United Nations and other international forums. The charges against India had ranged from denying to the people of Kashmir their essential and inalienable right to self-determination, to actual genocide calculated to wipe out the entire Muslim population of the State, perhaps, whole of India. This had been so despite the fact that the State of Jammu and Kashmir had gone through the most democratic process of having its own Constituent Assembly, which had later become the Legislative Assembly, and which had duly ratified the full and final accession of the State to India. Having at her disposal the co-called best equipped, best trained and the most determined armed forces, supported and supplied by the United States of America and Communist China, an advantage

that she never had before, Pakistan launched her first **Total War against India . . . a war for the survival of Pakistan and unto the greater glory and greatness of Islam**. The war was to progress in two phases . . . the guerrilla and positional. The former was designed to re-enact the Algerian type struggle.

THE GUERRILLA PHASE

THE GUERRILLA FORCE . . . BUILD UP:- For several years, Pakistan had been busy organising the tribesmen and others into a guerrilla force with the ultimate objective of inducting them across the cease-fire line, soften the Indian resistance and then seize the State with regular armed forces action. Pakistan's efforts in the direction were intensified many times over after the Communist aggression against India when the scene of '**Hindi-Chini Bhai Bhai**' shifted to that country. Besides, Chinese training facilities and directional capabilities also became available to Pakistan. The Headquarters of the force under training by the Chinese were located at Murree. By 1965, the strength of this force, named '**Gibraltar Forces**' was estimated at 30,000 strong. Drawn from the regular Army, the Frontier Scouts, Mujahids and Razakars, the Gibraltar Forces were divided into ten units. They were given such glamorous and intoxicating names as '**Tarique**', '**Khilji**', '**Salaudin**', '**Kasim**', '**Khalid**', '**Ghaznavi**', '**Murtaza**', '**taza**', '**Babar**', '**Nasrat**' and '**Sikandar**'. These names were originally borne by men who had played outstanding role in Islamic history. The idea was to parade the names before the men under colours and the masses in general and raise their war morale. The effort was further augmented by three ordinances passed in quick succession. These ordinances made it obligatory on all employers in the country to relieve the Reservists for recall and ensure their reemployment and promotion on their return. These ordinances also provided for the recall of Air Force Reservists and the institution of Mujahid Force of 15,000 men and additional strength of 8,500 Razakars. It was in the second week of July, 1965, that **President Ayub Khan** gave his pep talk to the ten commanders. This was followed by an address and final briefing to the overall commanders of all the ten units. Stage appeared to be set for the launching of the guerrilla warfare of the much publicised and boasted Algerian type.

OPERATION GUERRILLA:- It was after all the preliminaries were over that the so-called Algerian type struggle, upon which so much was staked, was launched on the fateful day of August 5, 1965. Beginning with this day, batches of the so-called guerrillas . . . the self made, self styled and self imposed crusaders in the holy name of Islam and the liberators of the Kashmir Muslims, crossed all along the cease-fire line. Ultimately, their numbers rose to about 8,000. They fanned out into widely dispersed areas. To give to the guerrillas the appearance of an organised movement of the Kashmir people, there appeared on the scene, the so-called **Revolutionary Council** arrogating to itself the authority to map, chart, guide and conduct the guerrilla activity and emerge as a regular government, once victory was won. There also came into existence a clandestine radio **Sada-e-Kashmir** to give to the outside world, the so-called, full blooded account of the heroic and triumphant activities of the guerrilla force.

As per the information later made available to the public in India, the two Forces of comparatively greater significance were the Salaudin Force and the Ghaznavi Force. The Salaudin Force, comprising six companies, was scheduled

to arrive in Srinagar on August 9, and attend the festival of 'Pir Dastgir', a Kashmiri saint. On August 9, it was to participate in the anniversary of the first arrest of Sheikh Abdulla. As per the plan, it was to participate in demonstrations and, in the name of the people of Kashmir, stage a rebellion, capture the radio station and the airfield and overthrow the Srinagar Government. The force, however, suffered a grievous reverse. Wholly contrary to their expectations, the local population took up a hostile stand and frustrated their plan. Further, the force clashed with the local police. In utter desperation, it attacked and destroyed Bina Bridge. Elements of this force later penetrated into four key suburbs of Srinagar. However, when they failed to get local co-operation, they resorted to loot, arson, plunder, murder and rape. In anger, they set fire to the congested Batamullu locality. This marked the undoing of the entire force in the area. The other elements which spread into Anantang, Achibal and Gazigun areas; suffered the same fate at the hands of the local police and the people. The final encounter in the Khag forest, which this group had converted into its stronghold, ultimately sealed its fate and it had no alternative to trekking back to its point of origin.

The Ghaznavi Force, also comprising six companies, entered Jammu and Kotli with reinforcements constantly pouring in. Its strength ultimately grew to about two thousand strong. It operated in the Mendhar-Rajauri-Chingas-Jhangar areas. This force continued its activities despite initial reverses. By August 18, it was in virtual control of Budhil. It later fanned into Mohr, Arnas and Resai. Some of its elements also succeeded in penetrating as deep as Rajban. By about September 3, these elements had their base in Kulina and were operating in Dana and Pharwala. The force was very often supplied by air drops and their main dropping stations were De La and Shakarmarg. Right through the shooting war, which later broke out, this force continued to dominate a wide region in western and south western Jammu. However, unable to stand against the on-slaughting Indian armour, a vast majority of the force retreated into Azad Kashmir.

Comprising about four hundred men raised in Skardu and Baltistan, the task of the 'Tarique Force' was to strike towards Dras and Kargil. This force infiltrated through Gullavi, Marpo La and Kobal Gali. One of the groups headed for Zoji La and Sonarmarg. The force ultimately clashed with the Indian Security Forces near Summat Bridge on August 29. It suffered a grievous reverse and retreated back across the cease-fire line. The 'Babar Force', also some four hundred strong, crossed the cease-fire line through Bhimbar and Pensa into Kalidhar. Its task was to fan out into Nausheera-Sunderban Area. By about August 12, it succeeded in establishing its camps in Narjeta and Panampur. The force was ultimately engaged by the Indian Security Forces and was completely disrupted . . . almost destroyed. The 'Khalid Force', whose exact numerical strength could not be known, crossed through Razinagr-Dar-Tutmari Gali. This Force also met its end at the hands of the Indian Security Forces. The remaining three Forces, whatever their numerical strength, proved of no consequence.

WITH BEST COMPLIMENTS FROM
RAJNIKANT & COMPANY

19, BIBIJAN SSREET, (P. B. No. 3397) BOMBAY 3.

Phones :-

3 2 9 2 1 9

3 2 1 2 9 2

Residence :

5 2 4 3 2 4

IMPORTERS & STOCKISTS OF :-

ALL TYPES OF BALL ROLLER,
THRUST & NEEDLE BEARINGS.

AUTHORISED STOCKISTS :-

BBL - NORMA & KOYO BEARINGS

DISTRIBUTORS FOR :

B. C. BEARINGS.

Gram :—'ROWBEARING — BOMBAY.'

**IMPORTED
& INDIAN
BALL &
ROLLER
BEARINGS**

FROM OUR READY STOCK:-

Such as : SKF, NBC, BBL, NORMA & ABC,
Indian) FAG, STEYR, RIV, SRO, FAFNIR, R & M
RUSSIAN, HUNGARIAN, RUMANIAN, ZKL-
POLAND BEARINGS

AUTHORISED STOCKISTS FOR
'B. B. L' BALL BEARINGS

CONTACT:

SHANTI TRADING CORPN.

7/12, Nagdevi Street, Fatima Bldg.,
BOMBAY-3 (B R).

Gram : 'VISHWAPREM'

Phone : 329858

Branch :

Resi. 316781

- 1) Royal Building, 3rd Floor, Kadiakui,
Relief Road, AHMEDADAD-1.
- 2) Shanta Sadan, Dheberbhai Road,
RAJKOT-2.

INDIAN COUNTER-ACTION

PAKISTAN had claimed that the people of Jammu and Kashmir were in revolt against the Srinagar regime and had identified themselves completely with the Mujahids and Razakars from Pakistan. However, basing themselves entirely on the information given by the local Muslims and assured of their fullest participation, India moved into action to defend the freedom of the state which was an integral part of the Indian Union. In the first instance, India employed the Security Forces to hunt, track and liquidate the infiltrators. India, then moved to check further infiltration at the very source of their assembly and movement. For this purpose, India felt compelled to block and occupy all routes used by the infiltrators. In order to achieve this objective, India had no alternative to crossing the cease-fire line into the so-called Azad Kashmir.

THE CROSSINGS:- Indian troops crossed the cease-fire line at three different points and on three different dates. The first contingent crossed in Kargil Sector on August 15, and occupied three Pakistani positions. The capture of the posts was indeed a feat of daring, endurance and tactics. Entire fighting was at high altitudes, well above 13,000 ft. Indian troops had to scale four thousand feet of steep cliff. This immediately removed the threat to the Srinagar-Leh Line so menacingly posed by Pakistan. On August 24, the Indian forces crossed in Thitwal Sector and occupied two Pakistani posts . . . one of them being the strategically vital post of Pir Sahiba. On August 25, Indian troops crossed into Uri Sector and captured two posts located at the mountain tops, 8,000 to 9,000 feet high and guarding the routes of the infiltrators. The next objective of the Indian troops emerged to be Uri-Poonch Bulge. This Bulge, covered an area of 150 square miles and connected Uri in the north and Poonch in the South, projecting towards the Indian side of the cease-fire line. This was the main centre from where the Pakistani raiders infiltrated into the valley and certain parts of Jammu. The distance from this bulge to Srinagar and other parts of the valley was the shortest. Besides, there were a number of Pakistani posts, bases and supply depots located in the bulge. The Uri-Poonch Road was twenty-five miles long. Out of this, sixteen miles fell in Pakistani occupied Kashmir. Indian troops launched the operations without losing any time and without allowing any operational advantages to the enemy.

Haji Pir Pass:- After the capture of the posts, the Indian troops moved further in Kargil Sector. Haji Pir Pass emerged to be the first major victory to the Indian forces operating across the cease-fire line. Haji Pir Pass, at a height of 8,652 feet, was the Uri-Poonch loop. The distance from Haji Pir Pass to Poonch was about 11 miles. Out of this seven miles fell in Pakistani occupied Kashmir. The Pass was five miles south of the cease-fire line as the crow flies. However, it was considerably longer distance by tracks. The country was high and mountainous. The general height of the bulge ranged from 10,000 to 12,000 ft. About six miles north east of the pass was the Bedori hill feature at a height of 12,330 ft. This hill feature dominated the entire area covered by the bulge. Lying about nine miles south east of Uri, Bedori's shortest distance was about two and a half miles. The manner in which the Pakistanis fled from their various posts, despite huge quantities of arms and ammunition, ap-

peared to be surprising and even intriguing in the beginning. However, the cause was found out soon. Pakistanis, it appeared, had expected a frontal assault from the north along the old Uri-Poonch Road. They were completely surprised and virtually immobilised when the Indian units moved cross-country over the difficult mountainous terrain. Bedori, the dominating hill feature, was the first to fall. Indian forces then moved to envelop the enemy defences facing Uri and folded them up. Another column raced ahead to Haji Pir Pass. Three hill features were captured. Then began the final 4,000 ft. ascent to the Pass, through the night, in rain and slush along Hyderabad Nullah. The assault party got to the shoulder of the Pass, rested briefly and then climbed up. It then rolled down on the enemy and stormed the Pass. Within twenty four hours, the entire operation was completed. Indian tri-colour was planted on the Haji Pir Pass and the long standing ulcer was wiped out of existence. The exciting details of Haji Pir Pass operations shot into head lines in the Indian press and immediately served as major morale booster to the masses of the people. This, however, was not the case with the other major achievement of the Indian troops . . . the building of the four mile long road covering their route of march, within a record time of one dusk and dawn. The exciting details of this marvel of engineering skill, accomplished after defying and defeating hundreds of land mines, earlier laid by Pakistan, and some of the worst spells of Pakistani shelling, trickled across to the Indian people only slowly and in small bits. Not long after the Jawans captured Haji Pir Pass, the Indian engineers carried the road through the Pass and later, further to Kahula and ultimately to Poonch.

BATTLES OF SANJOI AND JAURA BRIDGE:- After the capture of Haji Pir Pass, Indian troops were committed to a number of other battles, remarkable, almost unique in their originality of conception and artistry of execution. However, the most important of such battles were the battles of Sanjoi and Jaura Bridge in Tangdhar Sector. Sanjoi was a feature situated at a height of 7,500 ft. Lying in the northwest of Tangdhar in the Mir Bugina Bulge, east of Kishan Ganga River, and almost overlooking the Indian positions, it occupied a place of vital strategical importance. Besides, the natural defensive advantages provided by the mountain ranges, Pakistan had taken every other step to make it impregnable even to the extent of intensive mine laying and barbed wiring. However, despite the incredibly difficult terrain, and massive concentration of the pick of the Pakistani troops, Indian forces served a major shock to them by appearing like a bolt from the blue. Indian forces first appeared in the Upper Sanjoi and captured the entire number of enemy posts. They then moved in the Lower Sanjoi and repeated the same process. It was during their operations in this area that they captured the sensational orders to the infiltrators. These orders has been issued by Major General Akhtar Hussain Malik, the overall Commanders of the Gibraltar Forces. These orders and other documents, captured later, went a long way in revealing the real mind and operational plan of the enemy and benefitted very greatly the subsequent Indian operations.

Having consolidated their position in the Sanjoi area, and having repulsed all enemy counter attacks, the Indian forces later captured Mirapur and Saragali . . . features situated at a height of 9,913 ft. Remarkable as the achievement was, it was followed by another achievement which beat the earlier record many times over. This was the victory in the battle of Jaura Bridge. This battle emerged as a classic instance of super action and endurance potential in the annals of mountain warfare. The Jaura Bridge on the Kishenganga River was

inaccessible from the Indian side. Further, it was separated by high mountain ranges and had all the advantages of natural defences of the kind that human mind could ever have devised. To reach the feature was a mighty problem . . . a **Gordian Knot** indeed. There appeared to be only one way and it seemed mad to think of it . . . attacking the enemy positions after marching over the crest of Sambri ranges covered with thick forests for more than thirty miles. The ranges at several points soared as high as 12,000 to 13,000 ft. Fantastic, as it sounded to the outside world, the momentous decision was taken. The march was so timed that attacks on Saragali in the south and Jaura Bridge on the north, by two separate columns, could take place simultaneously. Marching over a terrain, the like of which, perhaps, had not been experienced by any other fighting forces in the world, the Jawans covered the distance over a narrow ridge of 13,000 ft. high mountain in about four days and descended upon the horrified enemy at the bridge and Saragali. So great was the element of surprise achieved by the Indian troops that the Pakistanis fled in panic, leaving behind their dead and almost entire stock of arms and ammunition.

THE SHOOTING WAR.

THE so-called 'Algerian Style' guerrilla warfare, launched by Pakistan, on which so much had been staked, failed most miserably. It could not achieve its objective of winning over even a fraction of the local population and softening the Indian resistance. Had the authors and architects of the guerrilla war in Algeria been on the scene, they would have hung their heads in shame. Pakistan appeared to have no alternative to either admitting defeat at that stage or run the graver risk of a shooting war against India. In her utter and absolute desperation, Pakistan took the later decision. It was in pursuance of this decision that Pakistan launched the full scale military aggression against India. The operation code named 'Grand Salam' was begun a little before the first light on the fateful day of September 1, 1965. The first blow fell on Kashmir in Chamb-Jaurian Sector. Proudly proclaiming to the world, the Pakistani President, declared: 'Pakistan had been under threat of a murderous war. Exchange of fire had been going on for months all along the cease-fire line in Kashmir. This has now assumed grimmer aspect. The armies of the two countries have 'lashed'. Reminiscent of Hitler's declaration on the eve of the attack on Poland in World War II, as it was, the declaration, fortunately, did not go further to predict lightning victories. The operations later covered the entire frontier of West Pakistan. 'East Pakistan' (which has since emerged as an independent Republic of Bangla Desh) was an integral part of Pakistan. Throughout the period that the operations lasted, it remained puzzling and intriguing to the students of warfare, how this area remained free from military operations. This was particularly so because the area was known to be the most vulnerable in entire Pakistan and a counter-blow by India in the area would have immediately denied to Pakistan nearly half of its territory and majority of her population. It would also have denied to her the vital sea lanes and virtually starved her out in the matter of supplies of military hardware from overseas.

CHAMB-JAURIAN:- According to official version issued by the Government of India, Pakistan first probed the Indian defences in the Chamb-Jaurian sector. Having come to the conclusion that the Indian defences could be pierced, punctured and penetrated, Pakistani heavy guns opened fire on the Indian defence positions at Burejal, near the village of Chamb. In a feinting action,

they also shelled the Indian battalion headquarters in Jhangar area. They then launched an infantry attack on the Burejal position from Tabu village in Gujarat, across the international border near the trijunction with the cease-fire line. They suffered a reverse. Stung by this reverse, Pakistanis launched their second attack from the village, again across the international border and again suffered a reverse. In their third wave, the Pakistanis struck with two regiments of Patton tanks, supported by an infantry brigade. They pressed their furious attack across the international border over the cease-fire line from Bhimber, in an arc running north to Dewa. The objective of the thrust appeared to be to seize Akhnoor, which commanded the strategic Chenab crossing and controlled the Indian line of communication in the Naushera-Rajauri-Poonch Sector. Their next step appeared to be a massive blow, possibly from Sialkot, aimed at the capture of Jammu and bottling up the entire Indian Army in Jammu and Kashmir, including Ladakh.

THE GRANDIOSE DESIGN:- Pakistani offensive in the Chamb-Jaurian sector of Jammu and Kashmir was not designed to be limited to that area only. Intelligence reports later clearly revealed that Pakistan was fully prepared and concentrated on an all-out war to victorious decisions. On the eve of her massive onslaught in the Chamb-Jaurian Sector, Pakistan had massed one armoured and two infantry divisions in the Sialkot-Pasrur Division. Pakistan had also massed an identical force of one armoured division and two infantry divisions in the Lahore sector. Pakistan appeared to have calculated that if her initial thrust in the Chamb-Jaurian sector succeeded to plan . . . reached Akhnoor and Jammu . . . India would be unable to relieve the siege of Kashmir. Pakistan will then be free to commence her much boasted and trumpeted march to Delhi. Pakistan appeared to have two major offensives in view. The first, probably to be launched from Pasrur-Narowal, over Dera Baba Nanak Bridge, across Ravi and aimed at striking Gurdaspur and the vital road and rail centre of Pathankot. The second, which even the captured documents later corroborated, along Kasur-Khemkaran Axis. Pakistan appeared to have taken for granted the breakthrough in both the offensives. It appeared to be in the mind of the Pakistani top brass to exploit this breakthrough along three prongs . . . to Harike, Taran Taran and Beas. Later, it appeared to be designed to envelop Amritsar and threaten a thrust down the Grand Trunk Road to Delhi. On paper at least, it appeared to be a grandiose design.

INDIAN REACTIONS:- Pakistan appeared to have taken it for certain that her massive blow in the Chamb-Jaurian Sector, even if it failed to break the entire Indian military build up in Jammu and Kashmir, would completely unnerve the Government at Delhi, would provoke immediate intervention of the United Nations and fresh round of talks would start without denying to her the military gains that she might have made in the meantime. It came as a major shock to the Pakistani high ups when the desired and the expected did not happen. On the contrary, the Government of India declared its most resolute determination to arrest, contain and throw back the aggression from whence it had come. The momentous decision . . . the most momentous after the dawn of independence in 1947 . . . was taken and ground and air forces were committed to battle.

ASSAULT BLUNTED:- Realistic and practical as the Indian military command was, it admitted that Pakistani assault in the Chamb-Jaurian sector would make some initial gains. It would do so, not because of any enemy mili-

tary superiority, but because of certain other operational advantages. Indian military high command pointed out that, Pakistani line of communication in the area was very short and the forces could be easily reinforced and supplied from the nearby bases of Sialkot and Kharian. As against this, India had a long and exposed line of communication and a thin strip of plain to defend. Military situation as it emerged, would not permit India to run the risk of moving heavy armour beyond Akhnoor. Indian military command, therefore, cautioned the people against nervousness, panic and loss of morale. With exemplary courage and coolness of mind, the Indian forces fell back in a series of well planned withdrawals behind Chamb along the shallow Munawar Tawai River. Indian military command maintained the poise and posture of courage, even when Pakistani forces, wholly unmindful of the massive losses in men and armour, crossed the Manawar Tawai River and posed a threat to Akhnoor. However, this appeared to be the farthest limit to which Indian military command could permit the Pakistani forces to advance. Whatever the propaganda build up by Pakistan on her initial victories, the world soon came to know that these so-called victories were cryptic and at the cost of crippling losses in men and armour. In the battle, which lasted a mere 'five days', Pakistan lost over twenty-two patton tanks, several vehicles . . . and a large number of men.

THE ESCALATION:- Immediately after the Pakistani military onslaught in the Chamb-Jaurian sector, India made it clear that she reserved the right to hit back at a time and place and armed forces strength of her choosing. However, India declared that the objective of the hit-back would not be to occupy and hold any part of Pakistani territory, but to draw into the field of battle as much of the Pakistani war machine as possible and to destroy her war-making potential. In pursuance of this decision, Indian troops, while still committed to defensive in the Chamb-Jaurian Sector, struck at the main West Pakistani frontiers. They struck from three points . . . Gurdaspur, Wagha-Amritsar and Ferozepore. Further north, the units of the Indian Army flung into the Pakistani territory over Ravi, across Dera Baba Nanak Bridge. The official reaction to the Indian troops crossing into Pakistan was five minute broadcast by the President. The frantic declaration just said: 'We are at war'. In order to give operational shape and form to this declaration, Pakistan immediately committed her entire land, air and sea forces to what was claimed to be a 'Total War against India'. Working on a pre-set plan, Pakistani planes, late on the same night, dropped sticks of 60-70 para-troopers near the forward Indian bases of Pathankot, Adampur, Halwara and several other points in East Punjab. They were assigned the task of attacking the Indian air bases, installations and aircraft, capture the air fields, if possible. signal the success of their operations and await evacuation by their own aircraft. Alternatively, they were to complete their missions and trek across the curb to Pakistan border. Pakistan suffered her first major setback when these and other paratroopers subsequently dropped proved to be sitting ducks.

ON THE FIGHTING FRONTS:- Indian troops punctured the Pakistani frontier at Wagha. They followed it up with lightening advance across the Dera Baba Nanak Bridge. Unable to hold up the Indian advance Pakistanis blew up the bridge. By their thoughtless and rash action they denied to themselves the means of counter-offensive. This, itself, was a great relief to the Indian troops because they could concentrate more on other fronts. While maintaining their full pressure on Wagha Sector, Indian troops soon opened two more fronts in Lahore Sector. The objective in opening these fronts was to pin down the

Official Distributors of:

INDIAN OXYGEN LIMITED

For Industrial Gases, Oxy-Acetylene & Electric Arc Welding Equipment, Cutting Machines, Welding Rods, Fluxes and Electrodes.

SUPPLY & HIRE

Transformers, Air Compressors, Motor Generators, Diesel & Petrol Driven Portable Welding Sets, Argon Arc Sets, Water Pumps & Lighting Sets, Complete with Accessories. Exide BATTERIES.

Sales & Service

Full Fledged Service Station for
FUEL PUMPS & INJECTORS

Contractors to:

MAZAGON DOCK LTD.,
SCINDIA WORKSHOP LTD. and
other leading Construction Organisations.

THE ARC BRAZER

Engineers, Welding Specialists & Ship Repairers

Office: 84, Foras Road, BOMBAY-8.

Show room & Works: 20, Jackeria Bunder Road,
BOMBAY-33.

Grams:	Tele: Office: 378898	Show-room & Works: Residence:	
"ARCBRAZER"	374443	378441	379353
	374402	372327	374438

Pakistani forces concentrated in the area and prevent any fresh reinforcements reaching them. On the night of September 7, Indian troops moved across the Jammu-Sialkot Road to Ikhmal. The object of this move was to pin down the Pakistani IV Corps, including the 6th. Infantry Division, to draw it out in the field of battle and inflict maximum punishment. The following day, the Indian forces made another diversionary attack across the Rajasthan-Sind border at Gadra. The object of this was to pin down the Pakistani division located in the Karachi-Hyderabad region and prevent it, either from moving into the main battle or initiating any independent action. The major battles that later developed were the battle of Gadra, the battle of Asal Uttar, battle of Philloraha, battle of Burki and battle of Dograi.

BATTLE OF GADRA:- Situated in a sandy and trackless depression, Gadra was almost a bowl surrounded on three sides by sand dunes which overlooked the city. To the north of the city was a flat plain which served as the only vehicular approach leading to the city. A six miles sand truck, passing through a barren gorge, linked up the Gadra Road Railway Station in Rajasthan with Gadra city. Gadra Road, 25 miles east of Munabo, the last Indian rail terminus on the Barmer-Hyderabad line, was evacuated in the wake of repeated bombings and rocket attacks by the Pakistanis. In the city itself, the Pakistanis had deployed two companies of the Indus Rangers, a para military force, equipped with automatic weapons, high-scale transport system, mortars, machineguns, and up-to-date wireless communication system. In fact, their fighting value was that of an infantry battalion. Fierce fighting flared up when the Indian forces crossed the Pakistani border from Gadra Road at 3 A.M. on September 8. The Indian forces made a two-pronged attack. One battalion, supported by tanks, marched swiftly across the plain from Gadra Road towards the city. Another infantry battalion crossed the sand dunes surrounding the city. There was some resistance by the Pakistanis. However, they soon fell back from their positions. The follow-up attack by the Indian troops was so swift that the enemy fled the city by 11 a.m. on the same day. More reinforcements of Indian troops were rushed south of the city in two flanks. These two outflanking movements, supported by tanks and infantry, demoralised the Pakistani troops and their defences completely crumbled. They were forced to retreat further into their territory. In this action, the Pakistanis suffered heavy casualties and lost large quantity of ammunition, arms and wireless sets. The Indian troops continued their advance. The enemy again tried to give battle at Jessa-ke-Par, 12 miles from Gadra City. But the speed of Indian troops took them by surprise and foiled their attempt to launch another major counter-attack. One column of Indian troops then fanned out towards Skarby and Khokkarpur. Another column went up in the direction of Jogibera village which lay 10 to 12 miles from Gadra city. At the time of cease-fire India had a salient of 150 square miles in the Pakistan territory.

THE KHEMKARAN PULL OUT:- Khemkaran, the so-called point to open the Pakistani road to Delhi, was a sizeable town with brick houses. It towered over the flat field, interlocked with canal distributories, overgrown with tall sugar cane and bajra crops. It stood at the end of two roads leading towards Kasur from Amritsar and Patti. Kasur, another sizeable town, lay six long miles away . . . six long miles because in between Khemkaran and Kasur lay two obstacles, **Rohinalla and Ichogil Canal**. Rohinalla was a manmade drain, approximately 150 ft. wide and two to three ft. deep. It had a muddy bed . . . It was indeed a partial obstacle negotiable only at selected crossing places. It was

in a horse shoe fashion around Khemkaran area, both in Indian and Pakistani territories. Inside Pakistan the Nalla was canalised by means of 30 to 40 ft. high bund running parallel to the international border. The bund offered an excellent observation post for the Indian territory. It had extensive defence works and it was designed to act as the first line of resistance, if ever the Pakistani forces had to be on the defensive. Behind the bund ran the Ichogil Canal, claimed to be the marvel of modern engineering. There were extensive pill boxes, gun emplacements, underground tank hides and ammunition dumps located in and around the canal. It was indeed a formidable obstacle and was relied upon by Pakistan as the second and final line of defence. Approximately forty miles away was stationed the pride of Pakistani Army . . . **the first Armoured Division** . . . claimed to be the best equipped and most highly trained. It had the advantages of the cover provided by the canopy of Changa Manga Forest.

At dawn on September 6, Khemkaran woke up to the thunder of guns to find the Indian column advancing as a part of the general offensive in the Punjab. By about 11-30 a.m. the same day the force succeeded in securing all the initial objectives. The ultimate, however, was Rohinala and Ichogil Canal. Things looked bright and the operations appeared to be proceeding according to plan. However, at about 2-30 P.M., the same day, Pakistan mounted a fierce counter offensive and forced the Indian troops to withdraw from one of the strongly held positions. Throughout the night of September 6/7 Pakistan Corps artillery vomitted wrath by sustained and surprisingly accurate shelling. Under pressure of this shelling, the sun rose on September 7, to see most of the Indian positions in a process of being encircled. The situation appeared to be grave and needed immediate reappraisal. Having realised the futility of holding on to the positions rendered so untenable by enemy shelling, the Indian Command took the decision of a tactical withdrawal to the villages of Assals, Uttar and Chima. Pakistan took it as a route of the Indian troops and a major victory to her arms. Pakistan even boasted of having opened the road to Delhi. Pakistan continued her drum beating even when the Indian Military Command told that "**Hanooz Delhi Door Ast**" . . . **Abhi Delhi Door hai: Delhi is still far away.**

BATTLE OF ASSAL UTTAR:- The alternative positions taken up by the Indian troops were sited on both the main roads forking on to Khemkaran. They formed a continuous front of mutually supporting defended areas. Indian infantry was well dug in and Indian armour was excellently concealed in the fields of ripening cane and bajra. The new positions also offered several operational advantages . . . including bait to the enemy troops to move out of their prepared defences and fight in the open. Skilful flooding and mining of the area could also divert Pakistani armour to a more favourable killing ground. There was robust faith and confidence at all levels of the force that any further advance of the Pakistani forces would be blunted and the punishment inflicted on the advancing force would be unacceptable to them indeed.

Pakistani offensive against the new Indian positions came in five successive waves. As was later revealed by the captured documents and personal diaries of the commanders, it was based on three pronged armoured thrust using Khemkaran as the spring board . . . One thrust was directed to seize the bridges at Harike and Beas, the second to secure Jandiala Guru and the third along the road to Bhikiwind-Amritsar, thus scuttling the rear areas of the Indian formations deployed along the Khalra-Lahore Axis and Grand Trunk Road. The Pakistani assault came in five successive waves. The first four failed

to achieve anything significant despite the fury of the assaults and the fearful losses of men and precious war material. The fifth and the final assault, which put an end to all Pakistani advance in the sector, came on the morning of September 10. Pakistanis showed their tank concentration in the area of Munwar. The objective was to lure the Indian armour away from the prepared positions and then pounce upon it. Indians did not react the way Pakistanis expected. Pakistanis then launched a combat group along the main road against one of the defended localities. Indian forces succeeded in foiling the attack before the enemy infantry could close on the Indian mine field and clear the way by artillery action. Further, the enemy left flank was bogged by cutting nullah. Once this was done, Indian armour jumped to the kill. The firing order was reduced to a single word 'Maro.' The unwavering line of Indian infantry also got its bag at close ranges with 106 mm recoilles guns and grenades.

BATTLE PHILLORAH.—The battle of Phillorah in the Kasur Sector opened on September 8, and continued for fourteen grim days. Ultimately, it emerged to be the biggest and the most savage tank battle ever fought anywhere in the world. Pakistanis had hoped that there would be frontal assault on Sialkot. They were both surprised and disappointed when this assault did not come up. Indian troops first assaulted and took two villages... **Charwa and Maharajke.** They moved to Phillorah, south east of Sialkot. Units of the Pakistani 6th. Armoured Division moved up from **Badiane, Pasrur and Phillorah** to counter attack... Pakistanis committed six to seven regiments of armour, Patton M-47 and Patton M-48 tanks destroyers, Shermans and Chaffes. The initial Indian armoured advance outran the lorried infantry brigade, bumping over rough tracks and open country on wheels. It was consequently subjected to flank attack that caused some damage. The tactical lessons of this encounter were fully absorbed and more steady advance was resumed.

On the first day, 20 Pakistani tanks were destroyed. India lost ten. There was relative lull over the next two days, though a few more enemy tanks were destroyed. On the night of September 10, Indian armoured formations again moved forward towards Phillorah from protective infantry bed set up around the base. According to the official accounts, later made available, skilfully deployed and mutually supporting, Indian tank columns executed a flanking movement which separated the enemy armour from his infantry by deft manouever. Having thus broken up the enemy force into separate segments, and having forced him to close in his tanks, Indian forces moved to annihilate them piecemeal with tactical superiority and superb gunnery. As many as sixty six enemy tanks were destroyed on that single day. The losses to Indians were only six. The Pakistani armour defending Phillorah was smashed by early afternoon and a little later units of Indian infantry stormed through the Pakistani defences and took over the town. There was another relative lull for the next three days. This was on account of the Pakistanis trying to regroup their disorganised armour. However, even during this period Pakistanis lost another twenty tanks. Indian armour then swung west towards **Chaiwind** on the **Sialkot-Pasrur Railway**, and important link in the Pakistani defence system in the area. The third major battle was joined on September 14, and it lasted upto September 17. A toll of 76 Pakistani tanks was taken during these four fateful days. Meanwhile other units of the Indian Army cut the **Sialkot-Chapar Road** and pressed in on Sialkot from the north. The Pakistanis resisted fiercely and tried to mount a counter-attack with armour in

a bid to get around Suchetgarh. However, the Indian infantry stood firm and repulsed the attacks. Pakistanis tried desperately to regain control of the Sialkot-Pasrur railway but failed and this situation continued till the cease-fire.

CAPTURE OF BURKI.—The Indian operating forces had made a big salient, several miles deep into Pakistan. The deepest, however, was in the direction of **Burki on the Khalra axis**. Here the Indian troops were seven miles deep, almost overlooking the suburbs of Lahore. It was at Burki that one of the epic battles of the entire conflict was fought and the most telling blow inflicted on the enemy. Had it not been for the blowing up of the **Ichogil canal bridge** by the enemy, the fate of Lahore and the course of Indo-Pakistani conflict would have been entirely different. In view of the vital strategic importance, Pakistanis had taken every possible care to build impregnable and impenetrable defences. The defences in Burki, and along the Ichogil Canal, were based on concrete pill boxes which could bring down heavy and accurate fire on any line of approach. Even artillery bombardment and tank fire could have no effect against these concentrated entrenchments. **Operation Burki** started at 5-30 a.m. on September, 6. The first Pakistani position to be captured was **Haduria**. The next was **Nurpur** and finally came **Burka Kalan, Brahmabad and Burka Khurd**. All that remained then was Burki. In view of the formidable defences, attack on Burki by day was not considered wise, sagacious or gainful. Instead, it was decided to launch the attack by night. The use of tanks in the assaulting role was the most unorthodox decision taken. The attack on Burki was planned in two phases. In the first phase, the objective was Burki and the second was Ichogil Canal and the bridge head on the canal. Both these phases were to be supported by the whole of Divisional artillery. The Battle of Burki was fought under most intense hail of enemy fire. This included anti-tank guided missiles. It was indeed a cold steelgrenade and rifle fire fight dominated by ripping with bayonets lobing of grenades and heroic abandon. Enemy fire splashed angrily and everywhere... It was indeed a night of thunderous, bitter, brawling attacks against well entrenched enemy pill boxes and positions. Each bunker and each pill box had to be taken one by one under murderous mortar, artillery and automatic fire. However, despite all that Indian troops came upto either side of the bridge. Having held the area, they commenced firing on the bridge. They even kept a company ready to push forward. The grit and determination displayed by the officers and men of the Tank Corps emerged to be something fantastic. Unfortunately, at this stage the enemy got extremely panicky and decided to destroy the bridge. In a very big bang that could be heard for miles around, Pakistanis destroyed the only link that Indian troops had on their side of the road with the road on the other side. However, the Indian troops stood victorious in the epic battle of Burki.

BATTLE OF DOGRAI.—The Battle of Dograi was the last and also one of the grimmest battles before the cease fire. Situated on the Ichogil canal on the main **Grand Trunk Road Axis**, Dograi was a major Pakistani stronghold. The town was fortified by well sited concrete pill boxes and bunkers and was defended by a strong force of armour and infantry. **Operation Dograi**, which has since come to be recognised as a classic instance of outstanding leadership, sound planning and undaunted courage and toughness of the Indian officers and Jawans, began on September 21. Carrying out the operation in the face of most intense enemy shelling and machine gun firing and over the minefield in the pitch dark night, the Indian troops reached Dograi at 3-30 p.m. the next day. Here, the enemy attacked

with infantry and tanks but suffered a reverse. The same was the case with the counter offensive with whatever man power and war material was left that Pakistan launched again. By the time the cease fire came into effect at 3-30 on September, 23 the historic Battle of Dograi stood resoundingly won.

AIR ACTIONS

AT the outbreak of the hostilities, Pakistan had a single type of world's most versatile multipurpose fighter-bombers and very large number of operational extensive and bases which could permit wide and variable dispersal. It also had very powerful radar network supported by a vast communication system interlinking the entire chain of air bases. These radar eyes covered the whole of West Pakistan and could scan all the forward Indian bases through a series of pear shaped lobes swelling outwards and upwards from stem at an angle, the space below the lower contour being blind. Apart and aside of this, Pakistan had a number of small radar stations located near the border. They were equipped with smaller scanning pears and could thus fill some of the blind spots between the cluster of large pears. This provided a low level surveillance grid and also constituted an early warning system. As against this, Indian Air Force had a multiplicity of the aircraft type, each with its peculiar maintenance armament and servicing requirements. The Indian aircraft were neither of the latest type, nor of the same lethal capabilities as of the Pakistani Air Force. Indian radar network was also not of the same capabilities. However, despite all these limitations and handicaps, the Indian Air Force was able to meet all the demands made on it and acquit itself most magnificently in all the roles.

Indian Air Force planes took to the skies in response to the SOS from the thin line of defenders in the **Chamb-Jaurian sector in Jammu and Kashmir**. Within minutes of the word of command, twenty-eight fighters in sections of four each, took off from their bases, with full complement of armament load. In their very first strike, comprising seven missions they knocked out fourteen tanks and destroyed a number of heavy vehicles. Within the next two days the Indian planes were the masters of the skies in the region and they retained this mastery till the close of the conflict. The next phase of the intervention of the Indian Air Force opened when the Indian troops marched across the international border into West Pakistan. This task assigned to the Indian fliers in this phase was to support the ground troops as well as to disrupt the enemy logistics. Indian fliers once again proved to the hilt that they were second to none in the world in the understanding and employment of air power to the maximum good and advantage of the national war objectives. Beginning with their first telling attack on Sargodha and Chaklala, Indian bombers flew over two hundred sorties through the fateful days that the conflict lasted. They hit such distant and strongly held air bases of Pakistan as **Peshawar, Kohat, Khumra, Rislwara and Akwal**. They, thereby demonstrated that, they could penetrate the entire length and breadth of the enemy country, roam to their will and pleasure and carry out precision saturation bombing according as the conditions and circumstances of the conflict demanded. Every raid carried out by the Indian fliers proved damaging to the enemy. However, the most devastating raid of the entire period was the one carried out on the radar installations in Dabina in Sind, just across Kutch.

The air base was claimed to be the most modern and most powerful in the entire Indo-Pakistani sub-continent and, perhaps, in the whole of South. East Asia. The Indian air strike succeeded in completely disrupting the entire working system of the air base. In offensive fighter sweeps also, the performance of the Indian fliers was most remarkable and extremely impressive. They succeeded to a bewildering extent in knocking out enemy tanks heavy motorised transport and Formation Headquarters. The most remarkable thing of the entire air war was the continuous day light raids by the Indian fliers and the victorious dog fights at such low altitudes as mere 1, 500 feet, and in one of the sectors, as low as tree-top levels.

NAVAL ACTIONS

WHATEVER the standard of performance by the Pakistani Ground and Air Forces, the performance of the Pakistani Navy was the poorest of all. This was despite the fact that Pakistani Navy enjoyed the crucial advantage of the ocean-going conventional submarine. On the conclusion of the conflict, the Indian Naval authorities admitted that throughout the period of the conflict, there was no engagement between the Pakistani and Indian Naval formations. They, however, admitted that Pakistani submarine 'Ghazi' was prowling in Bombay waters, twelve miles from the base. They also admitted that contact was made with the submarine three times. While the first contact was considered unlikely, the Pakistani intruder was definitely contacted twice by



Telex : 011-3339 by
Grams: VIBHACO.
BOMBAY

Phone : 266371 (All Depts)
264555 (Mfg. Exp. Imp.)
After Office : 263795



VISHWA BHARATI TRADING Co.

Head Office : Post Box No. 1052, Near: G.P.O. 45, Mint Rd., Fort. BOMBAY-1

MANUFACTURERS :

ARGON-ARC WELDING and ULTRASONIC ALUMINIUM SOLDERING Sets, RECTIFIERS, Welding Transformers, **P.V.C WELDING TORCHES**, Electrodes, Gas Welding Rods, Fluxes, All Soldering Requisites Adhesives etc. All **METALS-JOINING** Requisites & **SAFETY WEARS** Goggles, Gloves, Shockproof Matting, Helmets, Dust & Gas Masks, Safety Belts, etc., etc.

Branch Office : 2, Mullick St. G.P.O. Box No. 2628, CACUTTA-7.
Phone : 336680 Grams : "ARCWELD".

INS KUTHAR. The contact was held for one and half hours on the first occasion and for two hours on the second. The Pakistani undersea vessel was subjected to a number of attacks. The weapons of attack being extremely lethal, it was considered quite on cards that the submarine was damaged pretty badly and must have romped back home.

The facts of performance by the Indian naval authorities, and fully corroborated by impartial observers throughout the world, were that immediately after the accidental and wholly ineffective bombardment of Dwakra and Okha ports by a Pakistani Naval vessel, Indian Naval destroyers moved out to patrol the Arabian Sea and Bay of Bengal. When committed to this operation, the units of the Indian Navy successfully kept the Arabian Sea clear of the enemy vessels, safeguarding, not only Indian merchant shipping, but checking every merchant ship which sailed into the Indian ports. All vessels approaching the Indian coast were accosted twelve miles off the shore. Only when their identities were established, they were permitted to proceed. After offensive sweeps, both in the Arabian Sea and the Bay of Bengal, extending 150 miles on either side, ships of the Indian Navy patrolled over 4,000 miles of the ocean, in an attempt to seek out the enemy which did not seem to be in a mood to come within range of the Indian ships. Apart and aside of this, Indian Naval aircraft operated in complementary role to the Indian Air Force. They also supported naval tactical sweeps in the tactical role giving both air cover and anti-sweep strike capability. They operated seawards from Cape Comorin to the borders of West Pakistan. They took over the air defence of the maritime posts of Bombay, Goa and Cochin and worked in close support of the sea defence operations.

THE CEASE FIRE : Right from the start of the hostilities, the UN Security Council took a very serious view of the situation. On September, 2, the UN Secretary General appealed both to India and Pakistan for an immediate cease fire. The following day, he presented to the Security Council members his long awaited Report on Kashmir. In this Report, he clearly admitted his inability to elicit any assurance from Pakistan that she would respect cease fire and the Cease Fire Line in Kashmir. On September 4 the Security Council met under the shadow of a "wider war in Asia" and called for an immediate cease fire in Kashmir. It urged both India and Pakistan to respect the cease fire line in the territory and to have all armed forces personnel of each country to be withdrawn to its own side of the Cease Fire Line. It also urged upon both the Governments to co-operate with the UN Military Observers Team, and asked the Secretary General to report on the implementation of the Resolution by India and Pakistan within three days. On September, 7, the Security Council met once again, and passed another Resolution taking a very serious note of the developments and further deterioration in Kashmir situation. It requested the Secretary General to exert every possible measures to strengthen the UN Military Observers Group. The Council once again called upon the Governments of India and Pakistan to cease hostilities immediately, and promptly withdraw all their armed personnel to the positions held by them, before August, 5, 1965. In pursuance of the said and the earlier resolutions, the UN Secretary General flew to Rawalpindi for personal talks with President Ayub Khan and other Pakistani leaders, and later, to New Delhi, for similar talks with the Indian Prime Minister, Lal Bahadur Shastri and other Indian leaders. On his return to New York, the UN General submitted to the Security Council the Report on his discussions in Rawalpindi and New

Delhi. The Security Council met once again on September 14. However, it was in its momentous meeting of September, 20, that it passed a unanimous resolution. The resolution (a) **Demanding Cease-fire at the moment and a subsequent withdrawal of all armed personnel back to the positions held by them before August, 5, 1965.** (b) **Requesting Secretary General to provide the necessary assistance to the supervision of the cease fire and withdrawal of all armed personnel,** (c) **Calling on all other States to refrain from any action which might aggravate the situation in the area,** (d) **Deciding to consider as soon as operative, Paragraph one of the Council Resolution 210 of September 6, had been implemented, what steps could be taken to assist towards a settlement of the political problem underlying the conflict and in the meantime called on the two governments to utilise all peaceful means, including those listed in Article 33 of the Charter to this end.** (e) **Requesting the Secretary General to exert every possible effort to give effect to this Resolution, to seek a peaceful solution and report to the Security Council.**

Throughout the period of conflict, India was ready and favourable to cease fire. However, India wanted a categorical assurance that Pakistan would withdraw from **Chamb-Jaurian** and, also pull out its infiltrators from other parts of Jammu and Kashmir. India also wanted a categorical assistance that Pakistan would not repeat the process, and that India would not be dragged from ceasefire to cease-fire. As against this, Pakistan had raised objections and created obstacles at every step and at every stage. Even at this stage, Pakistan made her acceptance of the resolution conditional. Conveying the conditional acceptance, the **Pakistani President** declared : **"The UN Security Council has been told that the resolution of September, 20, was inadequate and unsatisfactory. However, Pakistan had accepted it and fighting will cease w.e.f. 3 a.m. on 23 September. From that time onwards, Pakistani forces will not fire on the Indian forces unless fired upon. However, Pakistan, will keep her forces in the attack battle positions in the areas that they had occupied."** This contention of Pakistan was accepted and Indian and Pakistani forces remained in their battle attack positions even when the cease fire became effective at the specified moment. It was from these attack positions that the withdrawal of the armed forces was later carried out in such phase in such quantum and at such intervals as was mutually agreed upon by the respective Field Commanders.

THE BALANCE SHEET

NEITHER in the guerrilla, nor in the shooting war phase India had made the beginning. First steps had been taken, and first shots had been fired by Pakistan. India had moved her Security Forces and later her regular Armed Forces only when attacked. Further, Pakistan had presented the conflict to the world as **'life and death struggle of the largest Islamic State in the world,—** As such, she had committed to the field of battle, her entire Army (less one infantry division, which was stationed in East Pakistan) her entire Reserves, entire Paramilitary formations, her entire Air Force and her entire Navy. Pakistan had also held out to her own people at home and her friends and allies abroad, the promises of spectacular victories. This was not the case with India. Prior to the movement of her Armed Forces, India made it very clear to the people at home, and those

interested abroad that, it was never, and it would never be the intention of India, to occupy or hold any Pakistani territory. However on the eve of the cease-fire, India was in occupation of nearly seven hundred square miles of Pakistani territory. Apart from the Kargil-posts, Indian forces were occupying 20 miles of Pakistani territory in the Tithwal Sector, 140 square miles in the Lahore-Kasur area and about 150 square miles across the Rajasthan border in Sind. As against this, Pakistani Army was holding about 190 square miles in the Chamb-Jaurian Sector and some 20 square miles across the Punjab border and Khemkaran near Ferozepore Pakistani Army elements had also infiltrated into some isolated posts in Rajasthan, particularly on the eve of the cease-fire. However, Pakistani claims to having occupied some 1,600 square miles of Indian territory in Rajasthan were declared a fantastic lie, and a desperate bid to cover her colossal failure in the general campaign. In the matter of military hardware, Pakistan had entered the conflict relying mainly on her artillery and armour particularly, the so called invincible Patton Tanks and superheavy 8 inch guns, with a range of 25,000 yards, In the air, she had the world's most versatile and lethal capability aircraft. And it is in the matter of these 'ultimate dread weapons', that Pakistan suffered the most. In a mere twenty-two days, Pakistan lost, as many as 471 tanks. As against this, the Indian losses were just 123 tanks. In the air, Pakistan had entered the conflict with 104-F-86 Sabre Jets, 12 G-104. 24 B-27 bombers. The Pakistani losses in the air were 73 aircraft. As against his, India lost only 35 planes.

We are also

25

47 - 72

and growing with the nation...

We look back with pride and satisfaction on our contribution in the field of Scientific Medical Industrial Instruments. And we look forward with hope and excitement to the challenge in the field of Chemical Pharmaceutical Food Beverage Machinery.



J. T. JAGTIANI

National House, Tulloch Road, Apollo Bunder, Bombay-1.

*With the
Best
Compliments
of*

**THE
MOGUL
LINE
LTD.
BOMBAY**

(A Government of India Undertaking)

O P E R A T E S

**Haj Pilgrim Service between Bombay and Jeddah
Regular Cargo-cum-Passenger Service between
Bombay and Red Sea Ports :**

A N D

**REGULAR COASTAL SERVICE FOR TRANSPORT
OF COAL, SALT, CEMENT, ETC.**



16, Bank Street, Fort, Bombay-1.

Telegram : "MOGUL" Bombay Telephone : 256835 (4 Line)

CHAPTER 15

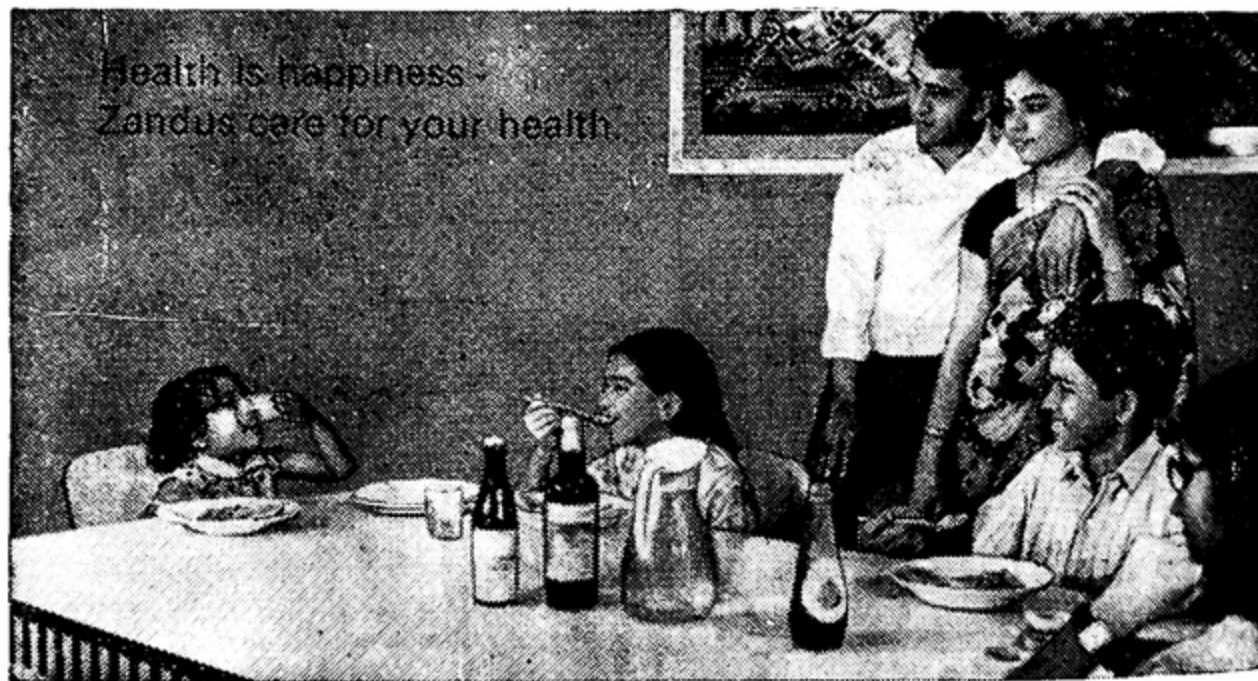
PAKISTAN'S SECOND TOTAL WAR

THE STRANGEST WAR IN HISTORY

EVERY succeeding war in history has been different in the originality of conception and the artistry of execution from the one preceding. The reason of this has been that victory scored or defeat suffered on the field of battle has led to renewed thinking on the sources, causes and consequences of the war waged, won or lost, and to use the objective lessons drawn to wage the next war more successfully. In a way and to an extent, therefore, every war in history has been strange.

In our times, the credit of the strangest war in history was first granted to the conflict in Vietnam. An effort was later made to shift this honour to the six-day war launched by Israel against the United Arab Republic. The effort did not succeed, despite the unprecedented surprise, speed, mobility, strike and fire power in the Israeli onslaught and the territorial gains made within this incredibly short period. However, world opinion today is almost unanimous that the fourteen-day war waged by India for the liberation of the seventy-five million people of Bangla Desh has been the strangest war in history todate. It has been so in its sources, in its causes and in its consequences, not only to the belligerents in the conflict, but also to the very nature, character, extent and intensity of the coming wars. A war which did not originate in the traditional manner, a war which did not develop and progress in the traditional manner, a war which emerged to be the most decisive in history, represented the most woeful mishandling of elements of successful warfare by a country which happened to initiate the war and thereby offered victory, complete and absolute, to the other side on a platter.

your family life is happy when good health prevails



Where else can you seek happiness if not in your family? And you can't get it unless it is health

For over sixty years now, Zandus are striving to bring happiness to people through good health

We are one of the few pharmaceutical concerns in India who handle Indigenous as well as Western systems of medicine with equal expertise. We manufacture over 1,000 Ayurvedic medicines and over 750 Allopathic and Biological ones.

Our patent medicines have reached the nooks and corners of our country—pure and effective medicines, the common man can afford.

We are proud, that after meeting the medicinal needs of our own people, we are able to export large quantities to other countries of the world.



Sign & Seal
of Confidence

ZANDU PHARMACEUTICAL WORKS LIMITED
GOKHALE ROAD SOUTH, DADAR, BOMBAY-25

Manufacturers of Ayurvedic, Allopathic & Biological medicines

THE BACKGROUND

THE sources of all wars and causes of victory or defeat on the field of battle have always been present in the body politic of the warring nations. The art of successful war has always been the optimum utilisation of the factors favourable and reduction and ultimate elimination of the factors unfavourable. It is this process which has always enabled the warring nations to use every escalation to their own respective advantage. The so-called 'Second Total War' launched by Pakistan stands out in history as a singular instance of the reverse process in the husbanding and handling of all elements of successful warfare and making defeat, complete and absolute, a certain outcome. An impartial study of the following will prove the contention.

SICK BIRTH :—Religious movements in history have, undoubtedly, played a vital role in providing ideological and motivational integration to the people of diverse origin, have strengthened their national base and have given to them a different kind of war morale. However, religious movements have seldom attempted and never succeeded in providing to the people the entire concept of nationhood... they have never succeeded in demolishing the international barriers and creating a super nation. History of Islam and Christianity stand out as monumental examples to this effect.

It would be too late now to moot and debate the causes and compulsions that led the All Indian Muslim League to the irrevocable conclusion that the Indian Muslims, with all their linguistic, cultural and ethnic negations and contradictions, common to other people in the same regions, were a nation in their own right and they could survive, as such, only if they were granted a homeland of their own, carved out of the Indian territory. It would also be too late now to moot and debate the causes and compulsions which later led the All India Muslim League to accept the new homeland which did not include all the erstwhile Muslims and thus kill with its own hands the original concept for which the new homeland was sought. On all accounts, Pakistan, when born, was a disabled and crippled baby. It could never gain its normal health and carry the original concept to its logical conclusions. With a massive population of Muslims still left over in India, it could also not build and wield the 'Islamic Shield' against India, which was sought to be condemned as an arc enemy of Islam and the very concept of Pakistan. Beginning with the operations in Jammu and Kashmir, Pakistan suffered repeatedly on this account. But Pakistan failed to draw objective lessons from its own history and sought to use the same shield when it had lost whatever little strength and vitality it had in the initial stages and was almost dead.

EXTERNAL RELIANCE :—At the time of its birth, Pakistan covered a territory which was hardly one-third of the left-over Indian landmass. Pakistan, however, could still provide manpower for a first class military machine. However, Pakistan did not have the industrial base to feed this war machine even for the most limited conflict. The only alternative before Pakistan was to turn to external sources and resources for the supply of these feeding elements. Pakistan it must be conceded, succeeded remarkably well in its pursuit. It drew close to the countries of Western alliance, particularly the United States of America and opened up channels for the massive supply of the most sophisticated military

hardware. However, flushed with the success achieved, Pakistan forgot that no people in history had survived by total reliance on external sources and resources and she could not defy and defeat history. Taking no steps to build up her own self-generating industrial base, Pakistan ultimately lost all freedom of action and manoeuvre, so vital to successful warfare. Pakistan refused to draw objective lessons from the objections raised by the United States of America against the use of military hardware supplied by her in the war against India in 1965 and the subsequent embargo placed on the supply of military hardware, both to Pakistan and to India.

PHYSICAL CONFIGURATION :—Pakistan, when born, was further broken up in two wings, each separated from the other by one thousand land miles of Indian intervening territory and three thousand sea miles around the highly vulnerable sea coast. This was a transport, communications, internal integration and mobilisational hazard even under conditions of absolute peace. Under conditions of war with India, there could not be greater limitation to effective offensive/defensive co-ordinated operations than the very physical configuration of the country. The only course open to Pakistan under the circumstances was to have near independent two sphere, balanced, all purposes armed forces, capable of initiating and conducting zonal defensive/offensive operations. They should have been backed by strong central reserve and central co-ordinating authority to give a single direction to war. Such a development would have inspired greater confidence of the people, given to the armed forces capabilities of conducting two front operations and still retain the capabilities of secondary diversionary operations. Such a development would have compelled India to disperse her forces on two widely separated fronts committed to extensive logistic support and internal security tasks. It could have thus provided scope for regional superiority and ultimately overall military superiority against India. Unfortunately, Pakistan chose to have a centralised defence structure based almost wholly in the Western Wing. With immediate effect, the Eastern Wing, traditionally soft and vulnerable, was converted into a wholly indefensible region. Indian armed forces could overrun the entire region without much effort and without allowing time for the military forces to arrive from the Western Wing in strength. Indian Armed Forces also had the added advantage of concentrating against the Western Wing and thus defeating Pakistan decisively.

ARMED FORCES STRUCTURE :—At the time of birth, Pakistani armed forces were almost wholly drawn from the Western Wing, particularly from Punjab. Despite the fact that they were granted the honour to carry the flag of their country, they were not national in their colour and context. Immediately, Pakistan could not have changed the manpower structure. However, under the armed forces expansion programmes, Pakistan should have concentrated on the unrepresented areas, particularly in the Eastern Wing. Unfortunately Pakistan continued to concentrate on the Western Wing, despite the mounting feelings of 'neglected and inferior humanity exposed to all types of external military dangers' gripping the minds of the people in the Eastern Wing. Pakistan continued to concentrate on the Western Wing, even when voices of Pakistani armed forces being foreign, occupational and hostile to the ambitions of the people began to be raised in the Eastern Wing. Pakistan ultimately committed the mortal folly of imposing four and a half divisions of these armed forces in the Eastern Wing at a time, when the entire mass of the people in the region were in

revolt against the so-called central authority, and had declared their determination to emerge as a free and independent nation in their own right. In the absence of local participation in the defence effort, this deployment was a serious drain on the total strength of the armed forces. They were almost a military waste and to that extent had rendered even the Western Wing vulnerable to Indian attacks.

MILITARY GOVERNMENT :—Pakistan, when born, was declared an Islamic Republic and irrevocably wedded to Islamic concept of democracy. However, it became the misfortune to Pakistan to fall into the hands of successive military governments of absolute dictatorship type. They were hostile to the democratic ambitions and aspirations of the people . . . even of the Islamic type. They pinned their hopes of survival on military adventurism against India. The “Guided Democracy” concept initiated and elaborated under **Field Marshal Ayub Khan** was neither Islamic nor democratic. Clearly it was a bid to fool and hoodwink the people and find some hirelings and stooges for the military dictatorship. It could not be saved even by the diversionary war against India in 1965. The general elections under **General Yahya Khan**, the very first to be held in the entire history of Pakistan, did have all the appearances of a major advance towards democratic set up in the country. However, even behind this move was alive and assertive the unbridled desire of the military dictatorship to continue in power. The military dictatorship had taken it for granted that, under the limited and severely circumscribed freedom of association, organisation, movement and speech, no political party would be able to make any headway. There would be some splinter groups, which the military dictatorship would be able to play one against the other, ultimately reject all as unfit to give democratic government to the country and still continue in power. Alternatively, the military dictatorship had in view the use of brute force to negate the electoral results and divert the attention of the masses of people by parading before them the immediacy of military threats from India. The course of events after the general elections clearly brought out the truth. Military dictatorship flouted the electoral results, resorted to brute force to crush the mass upheaval and moved to commit the country to a diversionary war against India. Unfortunately it was too late. Irreparable damage had, in the meantime, been done to the national fabric of Pakistan. The Eastern Wing was almost lost to the military dictatorship and it was not very close to the people even in the Western Wing. So completely isolated from the people, as the Pakistani Armed Forces were, they just could not fight the total war against India which the military dictatorship had prepared to launch. Only fools could imagine that Pakistani armed forces, whatever their real or imaginary operational brilliance, would have any hope of any victory, or even mere survival, in an armed conflict with India.

ANTI-INDIAN PHOBIA :—Effective from the very hour of birth, Pakistan had accepted continued and ever mounting hostility against India as its very *raison d'être*. It, had, therefore, become customary and habitual with Pakistan to hold India responsible for its ailments and seek to escalate every little irritant into a full fledged Indo-Pakistani conflict. The objective throughout was to divert the attention of the people from their more urgent socio-politico-economic ambitions and aspirations and keep them tied down to the heels of the military dictatorship. The other objective was to parade the Indian dangers before the friendly countries and secure more and more military hardware from these friendly sources and resources. It never occurred to the military dictatorships

in Pakistan that, their address and approach was more helpful to India than to their own country. The three distinct advantages that India had under the circumstances, were, (a) Masses of Indian people, saturated in the nationalist thought, had never approved the fact of partition, nor had their wounds, inflicted in the wake of partition, ceased to bleed and pain. Holding the leaders of Pakistan responsible for the painful and agonising fact of partition, they were never in low morale when it came to combating Pakistani hostility. The same fact permeated the body of the armed forces. (b) Indian industrial base, even in the initial stages, was viable. The persistent and ever mounting hostility of Pakistan provided further urgencies for expansion and rapid build up. On account of the whole-hearted participation of the people, the results were truly impressive, even for the militarily advanced countries of the world, including the United States of America and the Soviet Union. It was on account of these incentives that India was, by and large, self sufficient in the matter of defence stores and equipment and had her own freedom of action and manouvre. Committed against Pakistan, there could be no question of defeat on the field of battle. (c) The process of living on hostility against India, and not providing for the democratic ambitions of the people, the military dictatorship in Pakistan had alienated large sections of their own people and had driven them to seek covert or overt Indian help in their struggle for survival. This, not only provided Indian presence right in the midst of the policy makers of Pakistan but also endangered most seriously the safety and security of their war planes. When General Yahya Khan, in his most misplaced arrogance and obstinacy, declared the total war against India, the Eastern Wing was almost lost to him and his forces in the West were not in a position to conduct even defensive operations against Indian armed forces.

THE GREATER WAR THREAT :—Pakistan was fortunate to have some military friends. But they were military friends and not military allies. Suppliers of military hardware though, they were not committed to physical participation from the side of Pakistan, in the event of a conflict with India. Pakistan had the bitter experience in the first total war that was launched against India in 1965. Throughout the conflict Pakistan was alone. However, despite this bitter experience, Pakistan continued to hold the threats of greater war, meaning thereby that there would be other countries participating from her side in the event of war. The objective of threats was only to cow down India to accept a dictated peace. On several occasions, General Yahya Khan threatened that, if India siezed any part of the Pakistani territory, he will retaliate by a total war and he would not be alone in the war. General Yahya Khan, while declaring his so-called 'total war' even went to the extent of saying that 'our friends will move.' Unfortunately, the entire concept had a reverse effect. In order to safeguard the national interests in the event of the Pakistani threat materialising, India moved to find friends and allies and scored a major victory by signing a **Treaty of Friendship and co-operation with the Soviet Union**. With immediate effect, the Treaty reduced to naught whatever chances, the General thought, there were for a victory against India. The Treaty also emerged as a major deterrent to other powers moving into the conflict, if at all they had even a remote thought of doing so. As a realist and practical man, the General should have abandoned the idea of war. But he still went to war and fooled himself and the people of his country by asserting that 'our friends will move.' No friends moved, Pakistani armed forces stood, suffered and bled alone, witnessing the grim tragedy of the demise of Pakistan as it was born and as it was fighting to live.

THE IMMEDIATE CAUSES

ELECTORAL RESULTS :—The immediate cause of the war which was to undo the very concept of Pakistan, as it had existed for twenty-five years, was provided by the decision of General Yahya Khan, and his camp followers, to negative electoral results and keep themselves entrenched in power, in utter and absolute confrontation with the masses of the people. The decision was not acceptable to the political parties, either in the East or in the West. The Awami League had swept the polls and was in a position to form the Central Government as well the Provincial Government in the East. The Awami League took the decision of the military dictatorship as a regular war on the fundamental rights of the people and declared its iron determination to fight to the finish.

USE OF FORCE :—Whatever the declarations for mass consumption, the military dictatorship had decided to use force to keep the people under its heels as before. The leaders of the political parties in the West were not in open hostility. The main area of military operations was, therefore, the Eastern Wing. Things, as they stood, the Eastern Wing had been rather thinly held in the military way. The first problems before the military dictatorship, therefore, was to gain time to transport the necessary military forces. This was done by the repeated postponements of the meetings of National and Provincial Assemblies. The "finale" of the effort was given by the fateful talks which opened in Dacca. However, when the necessary military forces were available, the talks were broken off and regular war on the people of the region was declared.

With immediate effect the Bengali elements in the Pakistani armed forces, and para military forces, deployed in the region, were disarmed and locked up in concentration camps. A reign of terror, the like of which the history of mankind had not witnessed earlier, was let loose on the unarmed civilian population, and they were left with no option to either die or take up arms and fight back for survival. The people of the region had been known for their revolutionary activities and daring guerrilla actions. With immediate effect, with the touch of a magic wand, as if, the entire region was transformed into a huge theatre of operations. Never before in the entire history of mankind, armed forces had been committed to such massive barbarous and merciless killing, rape and arson of their own nationals. Never before the people had risen in such massive revolt and fearless of death.

THE REFUGEES :—Right from the beginning, Pakistan claimed that the situation in the Eastern Wing was its internal affair and no outside power had any right or cause to interfere. Pakistani view point was shared in all other countries. However, in order to be within the framework of this claim, Pakistani authorities should have taken every care that the use of force, and the consequences thereof, were not damaging or provocative to any other country. In order to serve the limited purpose of controlling the people's wrath, Pakistan should have resorted to strictly limited and selective use of force, coupled with the utmost healing and consoling effort in the political way. Pakistan should also have sealed the frontiers and not permitted the people to cross into India and



Nikhil TRADERS

DEALERS IN


- HIGH SPEED STEEL
- CARBON STEEL
- HOT DIE STEEL
- SPRING STEEL
- STAINLESS STEEL
- EN-SPECIFICATION STEEL

49/51 3rd Kumbharwada Durga Devi Garden, B'bay 4.

PHONE SHOP: 333771

RESIDENCE: 331439

BRANCH: 10/1444, MOTI POLE, GOPI PURA, SURAT-2.



FOR YOUR REQUIREMENTS OF
CORK SHEETS AND
ANTI-VIBRATION FOUNDATION CORK SLABS

CONTACT

BHALARIA BROTHERS

23-25, TAWA LANE (1ST FLOOR),

RESIDENCE: 352718 BOMBAY 3. PHONE: OFFICE: 328048

DISTRIBUTORS OF

"UMBRELLA BRAND" CORK SHEETS

ON REQUEST

WE SUPPLY TECHNICAL PROPERTIES OF
RUBBERISED (RUBBER BUNDED) CORK
SHEETS AND ANTI-VIBRATION MACH-
INERY FOUNDATION CORK SLABS.



seek protection there as refugees. Unfortunately, Pakistan resorted to the most barbarous use of force, coupled with most criminal attacks on the moral concepts and practices of the people. Pakistan also drove the fleeing people to cross into India. Ultimately, the number of dead touched three millions, the number of raped women crossed the staggering figure of several lakhs and the number of those crossed into India swelled to ten millions. It shook the conscious of the entire world and it imposed unbearable political and economic burdens on India. India had no alternative to using every possible means to seek that there was a political settlement in the region and the refugees were moved back to their homes and hearths. Pakistan interpreted it as Indian interference in her internal affairs preparatory to full fledged military aggression. Pakistani armed forces took up aggressive positions, both in East and West, including along the cease-fire-line in Kashmir. India was left with no alternative to moving her armed forces and poise them for defensive action. Indian intervention was thus invited by Pakistan. Pakistan had no cause to regret the subsequent events.

PAKISTANI BUILD UP :—Prior to the outbreak of hostilities Pakistan had only one Division, consisting of four infantry brigades, deployed in East Pakistan. During February-March, 71, Pakistan moved another division to the region. In March, 1971, the third division also began moving and its build up in the region was completed in April 71. In May, 1971, Pakistan also moved additional troops equivalent to about a division. In all therefore, Pakistan had full four divisions deployed in the region. Not content with this massive build up, Pakistan also moved 4,000 personnel of the **Frontier Corps** and inducted some 5,000 **Police personnel**. During the period, April-May 1971, Pakistan raised 35,000 armed **Razakars** and 25,000 **East Pakistan Civil Armed Forces**. These formations were recruited mostly from non-Bengali and collaborationist Bengali elements. By the time the hostilities broke out, Pakistan had a total force of approximately 35 Infantry battalions, one armoured regiment, two armoured squadrons, six artillery regiments, a number of independent mortar and field batteries, besides a large number of para-forces. These forces had fanned out to all border towns and re-occupied a number of border posts earlier held by the **East Pakistan Rifles** who had revolted. They had also built strong defensive positions, adequately stocked with ammunition and supplies.

It was in July, 1971, that Pakistan held out her first threat of total war against India. This threat was followed up by provocative air intrusions into the Indian air space. However, it was from August onwards that real warlike preparations were evident in the West. Under the pretext of training exercises, various formations were moved forward from their normal peace time stations to the borders. Towards end of September, they were moved into their battle locations. Build up in **Haji Pir Pass** was commenced in August when One Infantry Brigade was moved from **Jari Khas** to border areas north west of the **Merala Headquarters**. The 17 Infantry Division arrived at **Gujranwalla** in the first week of September. The 105 Independent Brigade Group was moved near **Sulemanki**. By 15 October, Pakistan had completed all her moves and practically all the forces, land, sea and air, were in their battle locations. Massive supplies of military hardware from external sources had also reached the country and more were on the move.

FOR YOUR REQUIREMENT OF
FIRE EXTINGUISHERS
AND
FIRE FIGHTING EQUIPMENT

CONTACT

CO₂ FYV. FYTER CO.

26. KHETWAD 3rd LANE
BOMBAY.4 (BR) Phone : **365907**

WORKS

4-7, BYCULLA SERVICE INDUSTRIES
SUSSEX CROSS ROAD, BYCULLA
BOMBAY 27.

PHONE: **37 19 42**

WITH

OUR WARMEST GREETINGS TO
ALL OFFICERS AND MEN OF OUR
GALLANT ARMED FORCES

BHARAT ENGINEERING WORKS

50, NAGDEVI STREET, BOMBAY-3.

PHONE: OFFICE: 320694

FACTORY: 593661

MANUFACTURERS OF

**"BHARAT" BRAND SODA, ACID, FOAM, ETC.,
CO DRY POWDER FIRE EXTINGUISHERS
AND
FIRE FIGHTING EQUIPMENTS**

INDIAN PREPARATIONS

INDIAN precautionary measures against Pakistani threats had their beginnings in the tensions generated by the blowing up of the hijacked Indian Airlines aircraft on Lahore airfield. Since the incident did not escalate further, most of the forces sent to their operational posts were withdrawn to their peace stations. However, vigilance against Pakistan was not given up because the incident was followed up by the crisis in East Pakistan. In the event of the crisis developing into Indo-Pakistani war, the overall threat was seen extending to three Army Commands, two Naval Commands and three Air Commands. The potential active theatres were separated by thousands of miles. Extensive areas were directly affected and the forces involved were expected to be the largest since the Korean and Vietnam wars. The problems of logistics were tremendous indeed. On land frontiers, the main brunt had necessarily to be borne by the Army. However, co-ordination with paramilitary forces, more especially Border Security Forces, was essential. It was appreciated that, it was only through Naval action in such widely separated areas, as the Bay of Bengal and the Arabian Seas, that the Pakistani advantage of interior lines could be offset. The contingency also called for massive air effort to defend the air space. In the final analysis, the nature of multiple threats required military action on a very wide scale. They demanded very close co-ordination, not only amongst the three Services, but also with numerous civil authorities at the Centre and in the States.

FIRST STEPS:—The effort to secure the ultimate was begun with the Prime Minister, the Foreign Minister, the Chiefs of Staff, and the concerned civil officials, maintaining very close and continuous touch with one another. The Defence Minister's Committee was set to meeting frequently to take decisions on matters relating to defence preparedness. An Ad-hoc committee of senior officials, under the chairmanship of the Cabinet Secretary was tuned to provide a convenient forum for co-ordination between the Defence Services and Civil Administration. Arrangements were also worked out for effective co-ordination between defence and foreign policies. The requirements of the three Services were screened and projected by the Chiefs of Staff Committee. Their inter-service priorities and ways and means of meeting them were settled at the combined meetings of the Policy Requirements Committees. While all available intelligence was pooled and assessed by the Joint Intelligence Committee, co-ordination at the levels of the Defence Services was achieved through the Chiefs of Staff Committee which was serviced by the Military Wing of the Cabinet Secretariat, and its own Joint Planning Committee, which maintained very loose links with the Ministry of Defence.

AT THE SERVICES LEVEL :—The threat involved three Army Commands, three Air Commands and two Naval Commands. The dimensions of the tasks, the range of possibilities, the extent and intensity of the threats, the resources available were indicated to the theatre commanders. The plans submitted by them were later discussed, finalised and approved. While allowing considerable delegation of authority, the Chiefs of Staff ensured that local initiative was combined with the requirements of an integrated approach, which has to be centrally directed.

ARMY :—It has since been conceded that the Armed forces spent the intervening months in feverish preparations to meet the threat of all our war. The

Army, particularly had a herculean task, in raising and regrouping of forces to meet the three front concentration, with top priority to the Eastern Command, so as to make it operationally capable of conducting war in the East, should Pakistan decide to open hostilities in the West. The magnitude of the task could be seen from the fact that, till that time the Command was geared almost solely for mountain operations in the northern and north eastern sectors. Except for one infantry division, earmarked for the defence of West Bengal against East Pakistan border opposite Calcutta, the rest of the forces were intended, either for the Himalayan borders or for internal security in Nagaland and the Mizo Hills. The divisions deployed in these roles were all mountain divisions. They had no bridging or river crossing equipment. Their artillery was mainly pack or towed mountain artillery, too light to be effective against concrete pill boxes and fortified bunkers that would face them. There was little armour. Last, but not the least, the transport requirements for logistic support of operations in the reverine terrain had to be found some where else, since the Command possessed only an insignificant fraction of the resources required for this kind of operations.

The Army Chief accepted the grave risk of diverting some of his reserve mountain divisions facing the north to provide forces necessary in the Eastern Command. He sent two divisions to bolster up the West Bengal-East Pakistan border and ordered the raising of a new Corps HQ for command and control of these divisions under the Eastern Army. He also extricated the Nagaland division and the division operating in the Mizo Hills from their commitments and made them available for operations against East Pakistan. These divisions were grouped under Corps Headquarters loaned from the Northern Front. He also diverted to Eastern Command, one regiment of medium armour and two regiments of light tanks (PT-76 Russian amphibians). The biggest problem, however, was artillery support. The army Chief was able to make up most of the medium and field artillery deficiencies by nudging other fronts. Bridging resources, were built up almost from scratch. The extent of the effort could be judged from the fact that it ultimately met the requirements of the largest operation of its kind in entire military history.

AIR FORCE :—The maintenance set up of the Air Force had been reorganised towards the first quarter of 1969. The organised pattern had come into effect in July, 1970. However, it was feared that, even the reorganised system would not be adequate to meet the stress of operational conditions, and would possibly break down in view of the massive inadequacies in the communication and transport systems. Further changes were, therefore, introduced to ensure that essential requirements of the operational units were positioned at the required places within the shortest possible time. Maintenance control centres were set up at all units. A Maintenance Control Room at Air Headquarters, along with Maintenance command Liaison Cell, was organised. Apart and aside of this, all available resources were mustered to meet the emergency. The Vampires, which had been relegated to a training role, were refitted for use in the offensive role. Similarly the Havard trainers were re-equipped with air-to-ground rockets. A major innovation was the use of AN-12, heavy transport aircraft for carpet bombing. It was modified locally to carry a large number of bombs. Works on emergency basis were also undertaken for the protection of aircraft and vital installations. This was in addition to developing the forward basis for operating high speed aircraft. By proper re-allocations of priorities in the Works Plan, all these operational tasks

were accomplished. The more important of these works were the development of new airfields, the modification of the existing blast pens to give greater protection to the aircraft against enemy air attacks and bringing to optimum efficiency the existing stand-by generators and positioning of additional mobile generating sets at important bases for use, in case this static installations were damaged or destroyed in action. In cases, where critical supplies could not be materialised from overseas sources, modifications were carried out in India. The achievements in this regard were : (a) **Complicated Camera modifications**, totally designed and developed by Indian technical men and using indigenous material were carried out in Indian aircraft using external pods within a week to improve our photo reconnaissance capabilities. (b) **Adapters** were designed and fabricated for using existing explosives from all types of aircraft, including those from USSR. This resulted in greater flexibility and considerable saving in foreign exchange. (c) **Development and production of rectifiers** to replace critical values at Radar Stations. (d) **Modifications to the aircraft** to give them a multi-role capability. (e) **Modification of maritime aircraft** to provide homing facilities. (f) **Modification of aircraft to fit ECM (Electronic Counter Measure) equipment** to reduce the vulnerability of our aircraft over the enemy territory, (g) **Camouflaging of forward airfields and air bases and positioning of emergency repair machinery at all forward fields.**

NAVY :—In view of the persistent land-air threat posed by Pakistan and China, Indian Army and Air Force had been under a constant process of build up. Army and Air Force had also seen considerable operational actions experience. On account of the brilliant victories scored, the two Services had been constantly in the public mind. This, however, was not the case with Navy. Except for very minor commitment during the police action against the Portuguese in Goa, and later in the first total war launched by Pakistan in 1965, Navy had had no operational experience of any major commitment on the high seas. However, Pakistani build up prior to the outbreak of hostilities this time, and the persistent rumours that some other navies might also help Pakistan, overtly or covertly, a major threat to Indian security *via* the sea was seen developing. It was, therefore, considered absolutely necessary to bring the Navy to the highest level of alert, operational efficiency and effectiveness.

Exigencies of financial situation, coupled with the cost of modern warships, had already imposed serious constraints on the capacity to develop Navy to meet all its inescapable obligations. Immediately, there was no possibility of expanding the warship strength. However, to give operational effectiveness to the existing strength, three Naval Commands were created and the ship strength was distributed to each Command according as the extent and intensity of the threat foreseen. The reorganisation yielded the desired and expected results. When actually deployed in actions, the Western Fleet was able to carry out crippling sweeps against the Pakistani Navy in the West and the Eastern Fleet was able to carry similar sweeps against the enemy Navy in Bangla Desh. In collective and co-ordinated way, the reorganised Fleet was able to blockade the entire coast making it impossible to reinforce the enemy forces in Bangla Desh or to receive any type of help from outside sources. This task performed was without any laxity in the capability of the Navy to ensure safe passage to commercial and neutral shipping, calling at or moving out of Indian ports. In the overall picture Pakistani Navy was denied the advantages of operating on the interior lines.

DEFENCE PRODUCTION AND LOGISTIC SUPPORT :—As contingency planning proceeded forward, the machinery of the Government was geared to support the planning effort. Emphasis was placed at the outset on the mobilisation of indigenous capacities and on stepping up production. Ordnance factories and public sector undertakings were urged to make good the deficiencies of war materials. The production programmes for 1971-72 were reviewed, revised and enlarged appropriately. Suitable short-term measures were adopted to overcome bottlenecks, quicken procedures, mobilise reserves and hasten and augment production by every other means. Working hours were extended to provide for an expanded production schedule. Discrete priorities were laid down where competing requirements had to be met from the same production capacity and civil capacities. Both public and private sectors, were mobilised for component support and essential raw materials were allocated by diversion from areas of lesser priorities. The industrial workers responded to the need of the hour. The Ordnance factories stepped up their issues to the Services by about Rs. 25 crores during the year. The public sector undertakings, producing hardware for Defence Services, also rose to the occasion. Along with augmented production effort, an appropriate provisioning policy was developed. Deficiencies were assessed and identified. Arrangements were made to make good the shortfalls by indigenous procurement to the extent possible and also by imports from abroad, where necessary. The basis of provisioning itself had to be altered in view of the new massive threat in the Eastern Sector and the type of operations likely to be involved in that sector. Effective procurement action was organised; adequate procedural innovations were introduced to expedite action through the normal appointed channels, such as DGS & D. It was ensured that wherever necessary, the Defence demands would be accorded the requisite priority. Besides these efforts to expedite indigenous procurement, special attention was paid for procurement from external sources, both in regard to finished products and raw materials and components. Indian missions and procurement agencies abroad devoted special efforts to accelerate deliveries. Indian transport potential, both shipping and airways, was fully mobilised to assist in this process. See also "second line of Defence.) In the build-up of the stockpiles of the right kind of materials at right places and in right time as well as in maintaining uninterrupted flow of supplies to concentration areas. Co-operation of the Ministers of Railways, Shipping and Transport and Tourism and Civil Aviation was secured. While the Services maintained their own fleet of trucks and other vehicles for movements by road, the logistic plans called for considerable effort on the part of the railways and also of the Ministry of Transport and State Governments. The Ministry of Railways prepared contingency plans to meet various kinds of eventualities in the event of an emergency. The requirement of special type of wagons for troops and stores movement, facilities for quick transport of military specials, terminal facilities for defence forces, provisions of sidings and loops were among the many measures the Railways had to plan and execute in time. The highway in the eastern sector had to be improved. A number of bridges were strengthened, and the local civilian truck fleets hired to supplement the capabilities of the Service transport organisation and the Railways. Similar effort was also called for on the part of Posts and Telegraph Department in the field of line communications. Additional facilities were developed to provide for the increased requirements of the Defence Services. Protection of communications channels was ensured; key centres of communication were specially manned; and facilities for quick maintenance

and repairs were planned and set up. From the beginning, attention was focussed on upgrading and enlarging repair and maintenance facilities, in all the echelons, within the three Services. It was realised that limited resources could be most effectively used only by devising efficient arrangements for quick repair and speedy refit and maintenance. Effort in this regard yielded high dividends. As a result, India was able to increase the number of aerial sorties, to maintain the tempo of the advance of the land forces, and to make effective use of the naval craft. The logistic and provisioning build-up infused confidence in the forward formations and enabled them to carry out their tasks without reservations and to concentrate on the execution of operational plans. The campaign, while it revealed some shortcomings in the performance of the weapons systems and equipment, justified the policy of weapon acquisition had been followed. The primary aim of the policy was to acquire technologies related to weapon systems along with the weapons themselves and to develop to the extent possible, the necessary supporting facilities—such as manufacture of spares and ammunition, the overhaul and repair facilities. Where it was not possible to produce the equipment under license within the country. Actual operational experience justified the emphasis that was laid on the acquisition of a whole range of related systems and technologies in preference to undue weight being placed on induction of particular equipments or weapons.

ARMED FORCES...COMPARATIVE STRENGTH

INDIA :—On the eve of the pre-emptive Pakistani air strikes, Indian Army personnel strength stood just over eight and quarter lakhs of men. This strength was organised into thirteen infantry divisions, ten mountain divisions, several independent infantry brigades, two parachute brigades, one armoured division and some independent armoured brigades. Indian infantry formations were equipped with 7.62 mm light and medium machine guns, 81 mm mortars. . . all indigenously produced. The mountain divisions depended upon artillery supported by pack mountain guns (the 75/24 Indian produced guns and the Yugoslav 76 mm guns). Infantry divisions were supported mainly by the time honoured 25 mm guns, some Russian 100 mm field guns and the 130 mm medium guns. The heavy gun was the 7.2 inch howitzer. The anti-aircraft artillery consisted of the old 40 mm 6.6 (radar controlled) gun. In armour, it was estimated that the Indian Army had increased its strength since 1965, by about 450 T-55 and T-56 Russian medium tanks, 300 Vijayanta (Indian produced) tanks, mounting the powerful 105 mm gun and the faithful Centurians. These tanks, though comparatively obsolete, proved more than a match for the Pakistani (United States supplied) Pattons. The light armour consisted of the AM-13 French tanks, carrying a fairly powerful 75 mm gun and the Russian PT-76s, big lumbering amphibious armoured vehicles, with limited fire power, but invaluable in a reconnaissance role, particularly in the riverine terrain. The Indian Air Force had a strength of about 625 combat aircraft. This total included seven squadrons of MiG-21 supersonic (Mach-2) interceptor fighters, five squadrons of Sukhoi-7 fighter bombers, seven squadrons of Hunter fighter bombers, two squadrons of HF-24 transonic fighters and three squadrons of Canberra bombers. Radar surveillance and communication system had considerably improved since 1965.

Surface-to-air antiaircraft missile system around important targets had also been established. The Indian Navy had also been expanded since 1965. The main units of the Navy were one aircraft carrier (The Vikrant), two cruisers, three destroyers, two destroyers escorts, five Peyta class patrol vessels, four F-class (Russian) ocean going submarines and some landing craft and minesweeping vessels.

Territorially, the Army was organised into four commands. The Western Command consisted of three Army Corps of a total of thirteen infantry and one armoured division and some armoured brigades. This included the Reserve Corps, normally located in Central India but earmarked for troops operations on the Western front. The command also had two mountain divisions facing the Himalayan front from Ladakh to the Simla sector. Central Command's operational responsibility was to the central-northern sector of the Himalayas. Eastern Command also had three army corps and its responsibilities extended to Sikkim, Bhutan and NEFA sectors in the North, the Naga and Mizo Hills and the East Pakistan border. Southern Command's operational responsibility was in the Kutch sector and in Rajasthan. The Air Force was organised into four commands the Western, Central and Eastern Operational Commands and Maintenance Command. The Navy was organised in two fleets, one each for the Eastern and Western coasts.

PAKISTAN :—Early in 1971, Pakistan Army had twelve infantry divisions, two armoured divisions, and an armoured brigade. Out of this, one infantry division was deployed in East Pakistan. Two extra divisions were under formation to replace the two divisions later moved to East Pakistan. However, they were not fully operational when the hostilities broke out. Pakistan's Air Force consisted of six squadrons of Sabre fighters, one squadron of Mirage III supersonic fighter, two squadrons of B-57 bombers and one squadron of IL-28 bombers. Of these, one squadron was based in East Pakistan. The Pakistani Navy consisted of four submarines, one light cruiser, two destroyers, three destroyer escorts, two fast frigates and four patrol boats. Of the Pakistan armed forces, one division of four brigades was normally located in East Pakistan. The only heavy elements available to this division were an armoured regiment (about 05 Chaffee tanks) and a few artillery units. Air support was provided by one squadron of Sabre fighters, some helicopters and light transport aircraft. The East Pakistan Rifles consisted of 20,000 men. By early March, 1971, this garrison had been reinforced by rapid and secret induction of two more divisions, though not with their full artillery complement. Build up was continued thereafter. By October, there were four infantry divisions (totalling some 42 battalions), as well as more West Punjab Rangers.

Pakistan appeared to be fully convinced that, despite the 'apparent and surface deep' unrest, in the Eastern Wing, the people would join the battle against India en masse. The military dictatorship had, therefore, distributed small arms to the civilians extensively. Pakistan also appeared to be confident that there would be external intervention, particularly by the United States of America and China. The inflow of military hardware appeared to have been taken for granted. Under the circumstances therefore, there could be no fugurative estimates for the Pakistani military build up. India had to be prepared for all eventualities and for all exegencies.

INITIAL OPERATIONS ... MUKTI BAHINI

IN the initial stages, the burden of resisting, what the people of East Bengal called the forces of aggression and occupation from West Pakistan, fell on Mukti Fauj, which later became Mukti Bahini. It has since been conceded, and very rightly too, that, never in the history of man's resistance to a foreign aggressor and oppressor, there had ever been such a total motivation as was displayed by the people of Bangla Desh. It was out of this motivation that the freedom struggle was born. A peace loving, gentle, cultured and naturally docile people, who had not taken kindly to mercenary or professional militarism, but in whom lurked a core of acute political consciousness, which, when stirred, inspired them to grim resistance and won the ultimate victory, unprecedented in its totality in the entire history of mankind.

THE REVOLT:—It was known for long that, a certain degree of disaffection existed among the Bengali personnel of the Pakistani Armed Forces. It was because of the inequitable rank structure that few Bengalis could rise to high command. However, it was not easy, even for the leaders of political party like Awami League, to establish contact with the Bengali elements even after the stirring events that followed the historic and epoch-making declaration of February, 12, 1971, and even more so after March, 1. Actually, the political leaders were reluctant to accept such contacts even when they were offered by the Bengali personnel of the armed forces. The first approach made by Sheikh-Mujib-ul-Rehman to this effect was on March 19 when he got in touch with Colonel Osmany. Col. Osmany himself later conceded that, it would have been possible for the Bengali elements in the armed forces to continue or stay neutral, had the Pakistani authorities confined their crack down to selected Bengali politicians. It was the over-kill, the systematic 'elitocide' campaign to exterminate professional, intellectuals and army officers that dictated them to revolt.

On March, 25, and in the days immediately following, a number of officers and men were murdered in cold blood. Many senior officers had already been

Rotary Switches; Foot Switches; Limit Switches



ALSO: Fuse Holders, Terminal Blocks
Micro Switches and a variety of
components, Switchgear, Electrical
Instruments, etc.



Electric Controls Co.
165 Lohar Chawl, Bombay-2.
Tel: 310478, 315177

separated from their posts. The result was that, when the uprising took place, it was mainly under junior leadership. For instance, **Major Khaled Musharaf in the Comilla area, Major Sia-ur-Rehman in Chittagong and Major Usman in Chaudauga (near Kushtia).** On the eve of the crack down, Pakistanis attempted to deport a large contingent of the East Bengal Regiment personnel by sea from Chittagong. However, the Bengalis mutinied, 'hi-jacked' the ship they had sailed in and forced the captain to put back to port. The ranks of Mukti Fauj were further swelled by the mistakes committed by the Pakistani authorities. As the military crack down moved, more and more army and police personnel rallied round the young officers. Within a few days, by the touch of a magic wand, as if, there was a 'rebel army' of about 10,000 trained men, and they were fighting the Pakistanis in small groups.

SABOTAGE OPERATIONS :—The remarkable thing about the spontaneous uprising was the effectiveness with which sabotage operations were carried out. Road and rail communications were disrupted, bridges were blown up and rivercraft were sunk in large numbers. The perspicacity and resourcefulness in hitting the targets by the guerrillas, where it would hurt the enemy the most, amounted to genius. Remarkably successful, as the guerrilla operations, they were in all other regions, they were not so successful in the West and in the North because there were a large number of cantonments and a greater deployment of the Pakistani troops. In fact, in Dinajpur and Rangpur areas, there was very little progress. It was on account of this that, until much later, these areas were relatively firmly held by the Pakistani troops and the outposts in these areas held out much longer even after the commencement of the combined military operations by the Indo-Bengla armies.

MUKTI BAHINI :—After the end of April, the Mukti Fauj operations abated considerably. The next phase started...the long process for the recruitment, organisation, training and equipping of what eventually came to be called **Mukti Bahini**. The sancturies sought by the freedom fighters, when they went into hiding, were strung out along the whole length of Indo-Bangla borders. Camps were established, recruitment was stepped up and organisational and training facilities were made available. Since most of the recruits were educated youths, no difficulty was experienced in the matter of training. On an average, 2000 guerrilla could be trained and committed to combat duties every six weeks.

In the beginning, the guerrillas were armed mainly with rifles and submachine guns. As their operations intensified and they began to score successes against isolated garrisons and patrols of the enemy, their armour was greatly expanded, mostly by capture of the enemy weapons. By the end of September, many guerrilla groups had acquired light machine guns, hand grenades and even mortars. Clandestine factories were set up in the sancturies for the manufacture of such items as anti-personnel and anti-tank mines, booby trap explosives and grenades. Despite the fact that they were crude and cumbersome, they were effective and they took the expected toll of enemy lives and weapons. Actually, they were found effective even in blowing up bridges, destroying vehicles, columns and, occasionally, even damaging the enemy tank tracks. Towards the latter part of this period, rearming programme was no longer confined to guerrilla groups. Former regular personnel of the EBR were also grouped into regular units or subunits in order to enable them to co-operate with the Indian troops, should the

need arise for such action. The designation of the forces was changed from Mukti Fouj to Mukti Bahini after it changed character from a solely land force to an all Services organisation. At this stage, there were a large number of Bengalis, earlier holding key appointments in the Pakistani Air Force and Navy.

Whatever the nature and character of the freedom fighter's operations earlier, and whatever the damage inflicted on the enemy war machine, the objective became two-fold when Mukti Bahini moved into action. First it was to intensify economic warfare, and secondly, to kill Pakistani soldiers and capture their weapons. In both the tasks, the Bahini succeeded to a remarkable extent. As a result of its operations, flourishing tea industry was brought to a halt, large quantities of arms and equipment were captured and, in many areas, the Pakistani forces were terrorised into confining their movements to day light hours only. At this stage, it was not only the Mukti Bahini operating from the border areas who were responsible for these successes. There were many centres of resistance even in the heart of the country. They were gradually forcing the enemy into demoralising, defensive attitude. The damage done by these forces could be judged from the fact that in August, a number of supply ships were sunk by frogmen operating in Chalna and Chittagong. On October, they staged the most daring exploit. A Mukti Bahini gun boat ventured out to the open seas and attacked a British cargo boat, 7,000 ton *City of St. Albans*, pemping its hull and forcing it to limp back to Calcutta. Pakistani waters were thereafter a danger zone for shipping supplying the occupation government and armed forces. Until July, raids by the guerrillas were conducted on a restricted scale. Towards the end of the month, operations were stepped up....larger groups, in Company strength, were sent out. The groups penetrated deep into the enemy held territory and even went to the extent of fighting pitched battles where circumstances were favourable.

With Compliments Of

ORIENT SHIP AGENCY PRIVATE LIMITED.

Agents For:

MITSUMI O. S. K. LINES LTD., TOKYO
SOUTH SHIPPING LINES - IRAN LINE, IRAN

Orient House, 4th Floor,
Mangalore Street, Ballard Estate,
Fort, Bombay-1.

Phones: 261202, 266104

NEW DEPOSIT SCHEME

MONTHLY INCOME



CERTIFICATES

Take advantage of this
newest Savings Scheme
of Bank of India.

Under this scheme,
interest is payable
EVERY MONTH.



For details,
visit our nearest Branch today.

Bank of India

You have a future in this Star

THE WAR

NOT content with what Pakistan had done till that time, and determined to cover her action in the Eastern region, which had meant a regular and systematic genocide, Pakistan continued to hold out threats of war against India. General Yahya Khan even went to the extent of fixing the date of his so called 'total war against India. Pakistan ultimately took the suicidal step of launching pre-emptive air strikes on a number of Indian airfields and air bases. These strikes were claimed to be of the 'Israeli type,' and calculated to cripple the Indian Air Force on the ground and thereby demolish the Indian will to fight. Almost simultaneously, Pakistan moved her land and naval forces for offensive action both in the East and the West.

PAKISTANI OPTIONS:—Confronted with the uphill task of defending the long coast line and border facing India, the Pakistani military command in the East could have two possible choices: To resist the Indian forces with all the strength available and to stop them at the border or to fight a flexible battle on the borders and, if unsuccessful, conduct an organised withdrawal back to the ground of their choosing and then offer protracted resistance. Obviously, the former, if it could succeed, had the advantage of not giving up any great extent of territory. However, it carried the risk of being defeated in detail at the borders. The latter, though it could result in early loss of territory, gave to the Pakistani military command an opportunity of fighting a mobile battle and making the best use of the ground. In the ultimate analysis, it appeared, Pakistani military command pinned all its hopes on stopping the Indian forces on the borders. The vital factor which appeared to have favoured this decision was the pattern of Mukti Bahini operations. The Pakistani military command appeared to have taken it for granted that, the primary aim of the Mukti Bahini operations would be to liberate a belt of territory inside Bangla Desh, all along the border, possibly including some towns, and thereby establish the **Bangla Desh Government in exile** on the home territory and thus gain diplomatic leverage for seeking recognition. Pakistani military command similarly took it for granted that, since Mukti Bahini had the support of India, the Indian aim would also be to gain similar territorial foothold in Bangla Desh.

According to Pakistani military thinking, the greatest threat lay from the western and northern sides, not because the grain of the country (the direction of the flow of major rivers) accorded with the likely direction of the Indian attack. Furthermore, it was here, opposite the western and north-eastern borders, that Indian logistical infra-structure was taken to be most developed for supporting a major offensive. It was also thought that the terrain from the north would be more favourable to Indian offensive than in other parts. However, it was thought that a major offensive would not be able to develop over the single road link from south Gauhati to Shillong and the mountain roads thence to the borders. The Indian threat from the east was also not taken to be serious because of the almost total lack of infra-structure in the areas around Tripura and Silchar. The plan that Pakistani military command ultimately adopted appeared to be designed to meet the requirements of imposing maximum delay on the Indian advancing forces. It envisaged stretching out forces all along the 1,400 miles long border, blocking all routes of entry from India by occupying strong defensive positions all along

the road approaches and making the best use of the terrain. Fortunately, Pakistani military command had enough well trained and well supplied forces for the purpose. This plan was found operational when the Indian forces advanced into Bangla Desh. Pakistani military command was found to have deployed this strongest divisions on the eastern front opposite Calcutta. They were also found to have constructed formidable defences at Jessore and Jenida in the north western sector, the most strongly defended areas were found in the Dinajpur-Rangpur salient. The northern sector was found to be the least strongly held. Whatever, the reasons Pakistani forces were found to be committed to a rigid form of linear defence based on hedgehog tactics.

THE EASTERN SECTOR

INDO-BANGLA COMBINED OPERATIONS

INDO-BANGLA ALLIANCE :—The so called 'total war' unleashed by Pakistan cast the Indian armed forces in a unique role in the Eastern Sector. Mukti Bahini was already operating there to liberate the seventy-five million people from the 'occupational yoke' of the Pakistani armed forces. The situation called for the development of close understanding and cordial relationship with the freedom fighters. The hazard was that there was no previous experience in this regard to go by. The only factor to provide a firm base for mutual comradeship was the common values cherished by the people of Indian and Bangla Desh. Fortunately, the comradeship was established without much effort. Within the framework of an extraordinary political rapport, a Joint Command, under the leadership of G.O.C-in-C Eastern Command was established. Although easily established, the Joint Command had a difficult task ahead. The enemy was well prepared. The terrain was harsh and treacherous. Rapid movements were, therefore, not easy. However, it was essential that the task be carried out speedily and with as little damage to the civil population and to the infra-structure of Bangla Desh as possible. In the words of authority, 'To make the task possible of accomplishment, the most redeeming factor was that the Indian forces were infused with a sense of high purpose. Every officer and jawan was conscious of the awesome responsibility carried by him. The heroism of the freedom fighters and the agony of the people of Bangla Desh had further steeled the resolve of the forces to bring out, by their example and conduct, the vital difference between the armed forces of a democracy assisting in a liberation struggle and those of a military dictatorship, trying to subjugate a people. The Indian Army, Air Force and Navy, rooted in the soil of India, drawing their officers and men from all parts of the country, catholic in their outlook, derived inspiration and strength from the justice of the cause for which they were set to fighting.

INDO-BANGLA OFFENSIVE :—The Prime Minister of India was in Calcutta, the Defence Minister was in Patna and the Finance Minister was in Bombay on December 3, 1971, when Pakistan attacked in the West. Not long afterwards, the Prime Minister's aircraft took off from Dum Dum airport heading for Delhi. Later the same night, the Eastern Command received the Go ahead orders from Army Headquarters. By day break on December 4, Indian retaliatory thrust in the East was on.

The Eastern Command had already been tuned up to a high pitch of efficiency that would enable it dexterously to handle the war of movement. It had already been decided that it would not be feasible to control this fast moving operation by the issue of formal and customary written orders. Even signal messages, which had to be coded and decoded, were considered too cumbersome and time consuming. It had been decided that if the Commanders in the field were to be kept on the go, to maintain the momentum of the offensive, they would receive their instructions by telephone or wireless, on the spur of the moment. The procedure was adhered to strictly from the hour of the outbreak of the hostilities to the moment that the Pakistani forces in the East surrendered.

OPERATION CORPS-II:—On the morning on December, 4, Indian forces deployed opposite the Calcutta region, launched two divisional thrusts towards Madhumati river, which took off from the Padma at Kushtia and flew down south into the Sunderban delta, west of Barisal. The aim of this thrust was to liberate the territory west of the Padma. The ultimate objective of the thrust was to contain Pakistani strongholds near the border, while allowing the fast moving columns to by-pass them and race to the Madhumati. The immediate objective was to prevent the bulk of the enemy from withdrawing across the river and making for the Meghna ferries to Dacca. The Corps plan of two divisional thrusts was spread into several columns. one column making for Kushtia, one for Magura and Faridpur on the Jessore axis, one for Khulna and Barisal and others to cut the Khulna-Jessore-Kushtia railway to prevent lateral movement of the enemy. The biggest surprise of the thrust was that Jessore was bypassed. Jessore was one of the strongest enemy held positions in entire Bangla Desh. It was the Headquarters of an Infantry Division. There were as many as 5,000 men, supported by tanks and artillery, concentrated there. It was generally the opinion of the military experts, both Indian and foreign, that in the event of a frontal assault, it would take several days of bitter fighting and heavy casualties. The other reason for bypassing was that Mukti Bahini, supported by elements of Indian Army, had already gained a foothold in the enemy held territory, where the salient north west of Jessore cut into Bangla Desh at the Caugacha. Frontal assault would have seriously disturbed the position of Mukti Bahini. Keeping up the element of surprise, one brigade attacked, silently moving across paddy fields and waste lands, carrying all the impediments of battle with it. The local population came out for all the support needed in transport matters. In this way, and completely undetected by the enemy, a full mobile mechanised infantry brigade moved cross country into the battle. The same kind of process was repeated at the Darsana salient on the Kushtia axis. The only difference was that, if on occasions, the brigade on the move outstripped its supply lines, air drops were arranged. This demonstrated remarkable degree of success in air-land co-operation and co-ordination. Alternatively, the brigade lived on hard rations, accepting whatever supplies could be made available by the local population. On no occasion there was any attempt by the brigade on the move to stop for regular logistical support to catch up and it proved to be the precious time saving factor in keeping the momentum of the advance.

To the wonderment and amazement of the entire outside world, the Indian forces succeeded in capturing Kotchandpur on the Jessore-Kushtia railway and cutting the lateral railway within twenty four hours of their move. Without rest, the forces pushed northwards and, before another forty-eight hours were over,

they had advanced by another 30 kilometers and had captured Jhendia, a vital communication centre and thus cut the road link. Unable, to meet the emerging and developing situation, the Pakistani forces pulled out of Jessore and took up alternative positions at Maguria. The subsequent capture of Meerpur opened the way to Chandanga and Kushtia. India had scored the first major victory of the campaign.

OPERATION CORPS—XXXII:—On this Corps front, the plan of sending in the containing columns from the north, with the main thrust directed at Hilli, (at the narrowest point of the north-western salient), was to cut the railway south of Rangpur and then wheel south for Bogra. One brigade crossed the borders south of Jalapaiguri and another at Cooch-Bihar. The first had Dinajpur as its objective and other Rangpur. A divisional thrust struck out at Hilli. The advancing Indian forces met the stiffest enemy resistance in this sector. The enemy defences were very strongly constructed. In some places entire railway coaches had been dug into the ground to serve as pill boxes. However, moving forward in the face of ever growing enemy resistance, the Indian forces captured Pirgunj and Khanpur on December 5. On the 7th., they captured Lalmuirhat, across the Tista, north of Rangpur. On the 8th they liberated Durgapur. On the 9th., the two columns which had come up against the Rangpur and Dinajpur defences met extra-ordinarily stiff resistance. However, Indian forces continued their advance as per their own plan. The Divisional column, thrusting eastwards at the narrow point of the salient, invested the village of Hilli on the 6th. The enemy resistance was bitter, to the extent that the enemy garrison deployed had virtually to be annihilated before the post could be taken. A part of the Indian columns by-passed Hilli and made for Palashbari, 35 kilometers east of Hilli and captured it on the 9th. In the 101 Communication Zone area, the main strike was launched from Tura with Jamalpur, some 50 kilometers up the river, northwest, from Mymensingh as the objective. The enemy in this sector had deployed one full infantry brigade, supported by a squadron of tanks, . . . the brigade headquarters and two battalions in Mymensingh, one battalion in Jamalpur. However, despite this heavy enemy concentration, the Indian forces fought their way and were on the outskirts of Jamalpur by December, 9. Thereafter, a by-passing column crossed the Brahmaputra and cut off Jamalpur on the same day. The enemy then reinforced the Jamalpur garrison with one battalion.

OPERATION CORPS IV :—The task of liberating all Bangla Desh territory south of the Surma and east of the Meghana rivers was assigned to IV Corps, the strongest Army Corps under the Eastern Command, had the longest stretch of border as its operational front. The subsidiary tasks assigned to this Corps were to cut the road-rail communications to Chittagong and thus seal off a major supply channel for Bangla Desh and, at a favourable opportunity, to force a crossing of the Meghana river and make for Dacca. The task of the Corps began with launching of a division from the Silchar-Karimganj area towards Sylhet. Simultaneously, another division attacked along the Akhaura-Ashuganj Axis. The division from the south Tripura areas was moved in three columns . . . one to contain Comilla, one to strike out westwards towards Laksham and Chandpur and one southwards from Feni. In the north, the Divisional thrust crossed border opposite Karimganj and struck eastwards. Munshinagar, 14, kilometers west of the border, fell on December, 5. One column then raced for Sylhet had to face stiff resistance. It also came up against several other difficulties. To begin

with, the column had to effect a river crossing without any bridging equipment immediately available. A force of helicopters was called in and the first 'air bridging operations of the war' were carried out during the hours of darkness. This enabled the force to be at the gates of Sylhet by the next morning. In the central sector a Division was moved into action from the Agartala area towards Akhaura, with the ultimate objective of bouncing across the Meghana and race to Dacca 'bowl'.

An advantage to the force inside Bangla Desh was that Mukti Bahini had already obtained a lodgement inside Bangla Desh and was in contact with the enemy defences at Akhaura. However, the formidable hazard was Meghana . . . more than a mile wide in the stretch between Shaistanang and Bhairab Bazar. The railway line from Akhaura went north-westwards towards the Ashuganj rail bridge over Meghana. There was no proper road following the line of the railway, and the enemy was expected to blow up this bridge in the event of his being unable to stem the Indian advance. Despite these difficulties, the force was determined to beat the time table. Moving out of its positions, the leading Brigade first encircled Akhaura. It then moved on towards the nearby township of Ganganagar, which it captured on the 5th. Akhaura also fell the same day. Moving along the railway axis, the force then advanced on Brahmanbaria and captured it on the 6th. Here, as elsewhere, the local population volunteered to obtain information of the enemy dispositions further up. Relying upon this information, which the local population secured at great risk to their lives, the force got on groping forward, working round enemy positions, always forging ahead. The local population also became very helpful in transporting guns and ammunition across the country. The southern column of this force, thrust towards Comilla from south of Agartala, with the aim of containing the strong enemy garrison holding the defence in the Nainamati Cantonment, and working behind to cut the line of communication. In south Tripura, the third Division of the Corps moved in two columns in two different directions . . . the one heading westwards, made for the important railway junction at Laksham and the other south for Chittagong. By the 8th, the fifth day of the war, Barahmandara was taken, Comilla was encircled and the Laksham column was heading for Chittagong. The whole of the sector opposite Tripura was under Indian control. In the south, where the Feni salient had already been liberated before the commencement of the war, the column from the southern division was racing south of Chittagong.

THE TIGHT NOOSE :—While IV Corps columns in the east were racing for Dacca and Chittagong, the II Corps struck out for the line of the Madhumati. The northern Division sent two columns towards Magura, the only likely crossing place on the Madhumati, while the southern division after capturing Jessore made for Khulna. The two columns from the northern division of II Corps by passed the enemy garrison at Magura and reached the outskirts of Kamarkhali Ghat on the Madhumati-Kamarkhali was a vital crossing point on the river because across it lay the town of Mahukhali, which controlled the routes to both Faridpur and Goalunda Ghat on the Padma (or Ganga). Reaching Madhumati, the force had to slow down its advance. The delay was caused by lack of river crossing equipment. However the advance parties made use of local country boats, which the villagers willingly provided—the main column had to wait for the fleet of helicopters to air bridge it across the river. By the 14th

leading elements of the leading columns of the force had reached Faridpur on the Padma. On the Khulna axis, Daulatpur had been taken and the escape route of the enemy troops in the Kahhtia-Jessore-Khulna sector had been sealed off. In the north-western sector, progress made by the northern thrusts was slow on account of the resistance by the enemy. The fall of Lalmunirhat, northwest of Rangpur, had given to the Indian force control of Tstra crossings. However, it was the main Hilli offensive that forged ahead. By the 12th. Ghoraghat was captured from there the force wheeled south, aiming for Bogra. A strong group of Mukti Bahini was already operating in this region. With their help. Gobindpur, half way between Ghoraghat and Bogra, was captured. On the 14th. Bogra, the divisional headquarters of the enemy forces in the region was captured and the Indian forces were on the move southwards for Sherpur and beyond.

TANGAIL —WAR'S FIRST CAPTURE BY PARADROP :—By 11th. December, it had become obvious that Indian plan had succeeded. By this time a greater part of the Pakistani forces in the three regions had been encircled and their retreat to the 'Dacca Bowl' cut off. By this time, enemy troops had also begun to surrender in some sectors and the inevitability of defeat had struck them in all other sectors. Only in the Mymensingh sector, between the Padma, there appeared to be some possibility of enemy forces withdrawing more or less intact. There was only one enemy brigade in this sector. However, this brigade, together with the enemy forces withdrawing from the Ashuganj front, could be considerable reinforcement for the Dacca garrison, reckoned to be a total of some, 5,000 assorted troops, but no regular infantry formation. On the Mymensingh front, the Indian brigade investing Jamalpur had sent one battalion across the Jamuna and cut the road behind the defenders. Another brigade, which was moving for Mymensingh, had also arrived. However, there was no certainty yet that the enemy brigade would not be able to extricate itself and withdraw to Dacca, via Tangail, where a small enemy garrison was holding the defences, acting as caretakers for the brigade in Mymensingh, which was expected to fall back and fight from Tangail defences. It was, therefore, decided to capture Tangail.

Tangail area was also the headquarters of 'Tiger' Siddiqui's powerful group of Mukti Bahini guerrillas. They had virtual control of all the countryside. It was, therefore, decided to capture Tangail by a paradrop, which would make contact with the guerrillas, cut off the enemy retreat and hold on until a link-up was established with the Indian brigades in the north. A battalion of an Indian Parachute Brigade, together with its supporting arms, was dropped in the Tangail area in the afternoon of December, 11. The main tasks of the para battalion were : (a) To capture the bridge and the ferry site across the river to prevent any enemy scaping towards the south (b) To capture Tangail (c) To link up with the local detachments of 'Tiger' Siddiqui's Mukti Bahini guerrillas and (d) After linking up with the Indian brigade moving from Jamalpur to move towards Dacca.

Dropped from a height of 1,000 to 1,200 feet in a keen 12 knot breeze, the battalion's spread on the ground was somewhat larger than the 2 Kilometers by 1 Kilometer dropping zone, originally planned. That was not the only contretemps. The countryside, while generally flat, was dotted with clusters of villages, each with its own pond. Several parachutes, including that of the Commanding Officer, came splashing down in the middle of these ponds and the men had to swim their way out. A few mountain and recoilless guns also landed in these ponds. Other

parachutes, carrying both men and equipment, landed on tops of village huts. The battalion took all this in its stride. Within two hours, the men and equipment were reformed into their platoons and companies and were moved off to carry out their various tasks. While the main body of the battalion moved towards the bridge, one company moved to hold the ferry site. A patrol also moved northwards up the Jamalpur road to give warning of the enemy approach.

The first sign of the enemy was a small vehicle column coming from the direction of Jamalpur, which made contact with the patrol two miles north of the bridge. However, after a brief exchange of fire, the column withdrew. The next column, a larger one, came down the Mymensingh road, with full headlights on. This column was allowed to come right upto the battalion position. The first three vehicles were knocked out by rocket launchers. The remainder of the columns, strung out on the road behind, turned around and sped back. When the enemy realised that Indian Forces had captured Tangail, they mounted several attacks to open the route to Dacca. All these attacks were beaten back.

ON TO DACCA :—After the capture of Tangail, Indian forces commenced their advance on Dacca. The leading brigade was sent down the road to Joydebpur. Another brigade followed it up in the next few hours leaving the para battalion at Tangail temporarily. On the 13th December, the leading troops were half up at Joydebpur where there was some resistance. However, the second brigade passed through and took over the advance. The crossing over a river delayed it by a few hours. However, soon they pushed south towards to Tungi. Local People informed that, there was a newly built highway east of Kaliakair, unmarked on the map still, which took off southwards and linked up with the 'Khulna-Dacca Highway' and let into Dacca via Manikgang, from the west. It was decided to place the bet on this axis. The completely regrouped para battalion was pushed down the road. Thus it was that, in the early hours of December, 16, the leading elements of the Para Battalion came on the outskirts of Dacca. The stage was set for the 'finale' of the drama which had commenced twelve days earlier.

THE SURRENDER :—The first signs of the collapsing Pakistani forces in Dacca came to light when **Major General Rao Farman Ali, Military Advisor to the Governor**, flashed an appeal to the United Nations pleading with the Security Council to arrange for the evacuation of Pakistani troops and official civilians to Pakistan, in return of which he offered the establishment of elected government of Bangla Desh. The bid did not succeed. Hardly had the Security Council begun to consider the appeal when it received a message from General Yahya Khan countermanding the request. However, the appeal had clearly demonstrated that the Pakistani forces in Dacca were no longer in a position to offer any effective resistance to the Indian forces in the outskirts of the Capital City. Taking into consideration the humanitarian aspect, and guaranteeing the observance of the Geneva Convention, regarding the treatment of prisoners of war, the **Chief of Indian Army Staff** broad cast his first message to the enemy commander in Dacca advising him to surrender and thereby save the lives of his soldiers, the civilian population and avoid destruction of public property, which the continuance of the operations would inevitably mean. This message was repeated twice again. At the same time psycholological campaign to break down the enemy morale in Dacca, if there any left still, was stepped up. Military targets were also kept under constant pounding by the Indian Air Force. Earlier the Indian electronic

warfare programme and broken the Pakistani code. Enemy communications therefore, could easily intercepted and appropriate action taken to further erode the enemy morale. By land also, pressure was no less determined. The western and north-eastern sectors had been liberated and the retreating forces had been encircled. In the north-east, an entire enemy brigade at Sylhet had surrendered and Indian forces were moving southwards. The leading troops of Corps IV had reached Narsigdi on the Ashuganj-Tungi railway and were pressing forward to Tungi. The most remarkable achievement was of the Para Battalion from Tangail. The battalion had raced ahead and by dawn on December, 16, the Head of the column was leaving against Dacca . . . having come to within two miles of the city.

In the afternoon on December, 14, a message from the enemy commander in Dacca had come through to the American Embassy in New Delhi. The message offered the surrender of the Commander and that of his forces in Bangla Desh. The offer was not unconditional. However, the qualifications attached were largely of a face saving nature. They posed no problem to the ultimate outcome . . . the final and unconditional surrender. This message was immediately relayed to **Washington**. After reaching the **Secretary of State**, it was conveyed to the **White House**. White House, however, sent back the word, that a surrender by the Dacca Commander, without the knowledge and permission of his Commander-in-Chief, was unacceptable and that the American Government will have nothing to do with it, if it came through. All top level communication channels were, therefore, mobilised and frantic efforts were made to get through to the Pakistani Commander-in-Chief. While contact with high echelons of the Pakistani Government was established fairly quickly, the President and the Commander-in-Chief himself was not immediately communicable, even in this moment of supreme national crisis. It was only in the early hours of 16th, December, that the Pakistani President and Commander-in-Chief was available for consultations. His authorisation was duly obtained and the American Embassy so informed the Indian Army Headquarters. In the meantime, however, the Indian Chief of the Army Staff had received another message through the United Nations channels, telling him to expect a momentary announcement of surrender. The Indian Chief of the Army Staff had already informed the enemy Commander in Dacca that a cease-fire would not be acceptable. Urging again that the enemy forces in Dacca surrender unconditionally, he had ordered the halt of bombing of Dacca, between 17.00 p.m. on the afternoon of December 15 and (in the absence of further agreement) and 9.00 am. the following morning. The conditions that the enemy Commander stipulated in his last message to the Indian Army Chief were (a) **Guarantee of safety for all military and para military forces.** (b) **Safety of all those settled in 'East Pakistan' since 1947** and (c) **No reprisals against those who had helped the administration since March 1971.** These were not acceptable to the Indian side. It was at 13.00 hours on December, 16 that the Chief of Staff to the Eastern Command flew into Dacca carrying with him the **Draft Instrument of Surrender**. At 15.00 hours four Indian battalions entered the city from the north west. In the meantime, two enemy Major Generals surrendered along with as many troops as they still had under their command. The enemy commander in Dacca ultimately accepted and initiated the Draft Instrument of Surrender. The General Officer-Commanding—in Chief Eastern Command, accompanied by Air Officer Commanding-in-Chief, Eastern Air Command and Flag

Officer Commanding-in-Chief, Eastern Fleet and Chief of Staff Bangla Desh's Mukti Bahini High Command, flew into Dacca to receive the surrender. The Instrument of Surrender was signed at 16.31 hours at Dacca Race Course. The Instrument of Surrender, which resulted in as many as 93,000 Pakistani military officers and other ranks becoming prisoners of war read as under :—

The Pakistan Eastern Command agree to surrender all Pakistani armed Forces in Bangla Desh to Lieutenant-General Jagjit Singh Aurora, General Officer Commanding-in-Chief of the Indian and Bangla Desh forces in the Eastern Theatre. This surrender includes all Pakistani land, air and naval forces as also all para-military forces and civil armed forces. These forces will lay down their arms and surrender at the places, where they are currently located, to the nearest regular troops under the command of Lieutenant-General Jagjit Singh Aurora.

The Pakistan Eastern Command shall come under the orders of Lieutenant-General Jagjit Singh Aurora as soon as this Instrument has been signed. Disobedience of orders will be regarded as a breach of the surrender terms and will be dealt with in accordance with the accepted laws and usages of war. The decision of Lieutenant-General Jagjit Singh Aurora will be final, should any doubt arise as to the meaning or interpretation of the surrender terms.

Lieutenant-General Jagjit Singh Aurora gives a solemn assurance that personnel who surrender shall be treated with dignity and respect that soldiers are entitled to, in accordance with the provisions of the Geneva Convention, and guarantees the safety and well-being of all Pakistan military and para-military forces who surrender. Protection will be provided to foreign nationals, ethnic minorities and personnel of West Pakistan origin by the forces under the command of Lieutenant-General Jagjit Singh Aurora.

COMBINE BALL BEARING CENTRE

ENGINEERS & BALL BEARING SPECIALISTS

26, Sarang Street, 2nd Floor,
BOMBAY-3.

Importers & Stockholders of
SKF, R & M, FAC FAFNIK Hoffmann. Scal Mester,
Pollard, Trnnington & INS Bearings
Member of All India Ball Bearing Merchants Assn.

Gram: LIONPOWER

Phone : 329650
Res : 338563

—USE ESSO GAS—

The clean, safe and efficient domestic and
industrial fuel, with the KOSANGAS SAFETY HAT!
YOUR NEIGHBOUR HAS IT, WHY NOT YOU ?

Distributors :

KOSANGAS COMPANY

Bombay Agents :

THE NATURAL GAS CO. PVT. LTD.

Head Office :

53-57 Laxmi Insurance Building,
Sir Phirozshah Mehta Road,
Bombay-1.

Tel. No. 265435-36-37

Adm. Office :

Mehta Chambers, 5th Floor,
13, Mathew Road,
(Behind Opera House),
Bombay-4.

Tel. No. 359420-28-29

**IN THE SERVICE OF
ARMED FORCES AND AUXILIARY ARMS
NOW AS EVER BEFORE**

CROWN ENGINEERING CO.

91, BHANDARI STREET,
MANDVI, BOMBAY 3.

Phone :

3 2 1 4 2 4

Gram :

"CROWNTOLS"

Dealers in : { **GARAGE TOOLS & EQUIPMENT
WORKSHOP EQUIPMENTS
PRECISION MEASURING INSTRUMENTS**

BOTH FOREIGN AND INDIGENOUS MAKE AVAILABLE

We also undertake repairs of all types of
Electrical measuring instruments with
guarantee of satisfaction

WESTERN THEATRE

PAKISTAN followed the pre-emptive air attacks and night bombing raids on the advance Indian airfield and air bases by a general offensive in the West. Pakistan launched attacks across the cease-fire line in Jammu and Kashmir and across the international borders in Punjab, Sind and Rajasthan.

JAMMU AND KASHMIR

Chamb Sector :—Pakistani attack in the Chamb Sector was the most furious of the entire enemy offensive in the West. Indian forces, deployed in the area were at a slight disadvantage, in that the Munawar Tawi river flew to the east of Chamb. Indian defences, though based on the line of the Tawi, had covering positions to the west . . . only 50 miles from the Pakistan Army base at Kharian. The Akhnur 'dagger', a Pakistani salient south of Akhnur, threatened the rear of Indian defences. Pakistani attack in the Chamb Sector in Jammu and Kashmir, was launched in the evening on December, 3, 1971. The attack, under the overall command of **General Tikka Khan**, who had earlier been withdrawn from East Pakistan and appointed Corps Commander, was the most furious of the entire Pakistan offensive in the west. It was launched with four infantry brigades, an armoured brigade and eight artillery regiments. The attack was provided with adequate air support. Against this formidable force, India had one brigade and a squadron of tanks to the west of Munawar Tawi River. This force was reinforced by three more infantry companies and two more squadrons of armour during the battle. Pakistani attack was carried out in two waves. The battle raged for 72 hours. After which Indian brigade deployed in the area had to be pulled back across the Munawar Tawi River to its permanent defences in the area of Troiti-Dhonchal. Flushed with this initial success, Pakistani forces launched desperate attacks across the river and succeeded in establishing a lodgement on the eastern bank. However, Indian ground forces supported by strong air action, hit back. In the three days, from December 8 to 10, Indian Air Force flew 200 sorties against the attacking enemy troops, tanks, guns, vehicles and fuel dumps. The air action contributed decisively to the final outcome of the battle. The enemy was pushed back across the river and the rear of the Chamb garrison was saved. In this battle, on which Pakistan had staked so much, Pakistan suffered heavy casualties . . . over 1,350 killed and 4,130 wounded. Pakistan also lost 37 tanks. As against this, the Indian losses were 440 killed, 723 wounded. India also lost 17 tanks, one field gun, six medium guns, one heavy mortar and two anti-aircraft guns. The advantage to Pakistan, despite all the losses, was that it was still able to hold the area upto the western bank of the river.

Poonch Sector :—In the Poonch Sector also, Pakistan launched the attack on the evening of December, 3, 1971, employing one infantry division. Pakistani plan appeared to be to surround Poonch and capture it. One battalion was infiltrated in the area east of Poonch to cut the road to Mendhar. Another battalion launched the attack from the west. However, all the Pakistani attacks were beaten back with the heavy losses to them. The battalion that the enemy had infiltrated was destroyed or driven out. The Indian Air Force supported the ground troops in attacking enemy troop concentrations in the forests north west of Poonch. Again on the night of December 9-10, Pakistani forces prepared

for second offensive. This time, they were subjected to carpet bombing by AN-12 aircraft and their concentration near the Indian forward position were hit by Vampire aircraft. With the enemy attack halted, Indian troops in their counter-attack secured two features, Mangi-Tekri and Jungel Hill. This improved the Indian defensive potential. During the course of the battle Pakistanis were estimated to have lost 276 killed, 800 wounded and 32 taken prisoners. As against this, Indian losses were 130 killed, 393 wounded and 82 missing or taken prisoners.

INDIAN OFFENSIVE :—In the rest of the Jammu and Kashmir theatre, it was the Indian troops that took the initiative. The intention of the Indian offensive was not to acquire or hold Pakistani held territory. The sole aim was to 'rationalise' the cease-fire line . . . offsetting local tactical disadvantages, such as removing threats to the line of communication, denying the enemy easy routes for infiltrators and capturing dominating heights overlooking Indian positions. Although, these operations had limited aims, the carrying out of the tasks demanded some hard fighting, because Pakistanis, over the years, had built very strong defences along the cease-fire line.

In the **Partapur Sector**, Indian troops operated at altitudes over 5,000 meters proving that, winter operations in the high mountains, though difficult, were still possible. At the conclusions of these operations, Indian troops improved their positions along the **Shyok Valley**. In the **Kargil sector**, the Indian line of communication to Leh, via **Zoji La Pass**, was dominated by heights occupied by Pakistani forces. Operating in the area between **Shingo and Indus rivers**, Indian troops captured 36 posts out of a total of 80 held by Pakistanis. The average altitude of the area of operations was 4,500 metres. There was a fair amount of snow on the mountains, the low temperatures, combined with winds, caused many cases of frostbite. Evacuation of casualties and re-supply posed serious problems. However, they were overcome by the ingenuity of the local commanders and the gallantry of men. The IAF Vampire played a very significant role in softening up the enemy position with rockets and bombs, preparatory to infantry assaults. In the **Thithwal Sector**, where a large salient of Pakistani held territory lay on the east bank of the Kishenganga river and posed a threat to the Indian line of communication from Sopur, Indian troops cleared the enemy troops from the greater part of Lippa Valley. In the **Uri Sector**, where the Haji Pir Pass salient provided easy infiltration access to Gulmarg, Indian forces captured posts in the Tosh Maidan area to neutralise this threat. The **Chicken Neck Salient**, east of Jammu, was occupied by the Indian troops on 5/6 December to forestall a possible threat to the line of communication to Akhnur.

Punjab Sector :—Contrary to all expectations, and despite the extremely angry and indignant statements made by the Pakistani President and Commander-in-Chief, prior to the outbreak of hostilities, the Punjab sector was not so alive and ablaze as in 1965. However, on the evening of December 3, 1971, Pakistani forces shelled and attacked the Indian posts in the Punjab sector from **Dera Baba Nanak to Anupgarh** in the south. Of the three bridges over the rivers Ravi and Sutlej, where they formed the Indo-Pakistani boundry, the only one that lay in the Indian territory was the Hussainiwalla bridge near Ferozepore. There was a small Indian enclave on the far bank of the river always exposed to the Pakistani threat. On the night of December 4, four battalions of Pakistani forces supported by armour and artillery, attacked this enclave. The bridge over river

Sutlej was destroyed by artillery shelling. In the face of this attack in strength, and heavy artillery shelling, the Indian troops had to make a tactical withdrawal on the night of December 5, across Sutlej. During this period, the Indian Air Force gave adequate support to ground forces to enable the withdrawal of the garrisons which were cut off on the far side of the river. At Fazilka, Indian troops had to yield some ground in the face of massive enemy attacks. However the Pakistani lodgement on the Fazilka side, across the moat between Fazilka and Sulaimanki, was later eliminated after bitter fighting.

Retaliating in kind, Indian troops launched an offensive to capture the Sehjra salient, north west of Ferozepore. This salient posed a threat, not only to Khemkaran, but also to the Harike Bridge, further up the Sutlej. The attack came as a complete surprise to the enemy. Indian troops made an attack along the open and sandy river bed leading to twenty-four escarpments behind which the Pakistani defences were located. It was the one approach, which the enemy thought would not be made. The result was that Sehjra village was captured and the threat to Khemkaran was removed. Similarly, on December 6/7, Indian forces attacked and captured the enclave on the eastern side of the Ravi guarding the Dera Baba Nanak Bridge. This enclave was very strongly fortified . . . the enemy having spent months in constructing pill boxes and bunkers along the bund, concrete mortar positions and higher observation towers. Here again, it was surprise which unbalanced the enemy. The Indian assault came from an unexpected flank, after several feints from the direction from which the enemy expected the attack. The capture of the enclave forestalled and foiled a major attack by the enemy and gave to the Indian forces the control of the bridge. Pakistan also mounted attacks on the Ranian-Shamshe and Fetehtpur-Burj salients. Initially, some Indian posts were overrun by the enemy. However, Indian forces later launched the counter-attacks and cleared the enemy out of the area completely.

SHAKARGARH SECTOR :—A major threat to India in Jammu and Kashmir had all long been the southern boundary of the State. Here, the Indian line of communication from Pathankot, lay as close as 19 kms to the border with Pakistan. Pakistani cantonments being located comparatively nearer to the border, gave to the Pakistani forces the advantage of being able to threaten the line from the south. Besides, Pakistani II Corps, the strongest of the Corps in the entire Pakistani armed forces, was located in the area. It could, with great ease, cut the road link or launch an attack on Pathankot itself. The only alternative before India to safeguard against this threat was to pinch out the Shakargarh salient that threatened the Pathankot base. In September, information was received regarding the forward movements and concentration of Pakistani forces in this area. However India had taken the necessary precautionary measures and informed the Chief Military Observer of the United Nations Military Observer Group in India and Pakistan, the reason for having done so. It later came to be known that entire area was heavily fortified with permanent field fortifications, anti-rank ditches and trenches. In addition, enemy forces in the Shakargarh bulge had laid extensive minefields. These minefields were reported to be in three continuous and deep belts. Pakistan had deployed in this area, 8 Infantry Division of four brigades, 17 Infantry Division and one armoured regiment. The country was generally flat. The biggest ob-

stacle to Indian movement in the area were a number of spate nullaha and rivers running north to south. The widest of the Nullahas was Basantar Nullah, which flew to the east of Shakargarh. Two major towns in the salient were Zafarwal, about 15 kilometers south of the Jammu border and 45 kilometers east of the Gurdaspur border, and Sharkargarh, situated roughly between Zafarwal and Gurdaspur.

Despite the heavy concentration of the enemy forces and the other obstacles, Indian No. I Corps moved into the Shakargarh bulge on December 5/6. One thrust was made from the north between the Basantar and Bein rivers. The second was from the east in the general area of Thakurpur ferry. The northern thrust had to negotiate through three deep minefields which were all covered by tanks, anti-tank guns and machine guns. As a consequence, the advance was slow and it was only on December, 15, that the Indian troops reached the line of the Basantar river and the lateral and from Zafarwal to Shakargarh. The trawls fitted to T-55 tanks proved extremely useful in breaching the enemy minefield. The attack from the eastern side went in on the night of December 8/9, across the River Ravi. It was supported by armour and artillery. It also had to breach extensive minefields. Indian attempts to cross the Bein River on December 13/14 were resisted by the enemy most fiercely. According to a published accounts: 'The critical point of the operation was reached when the western-most columns reached the outskirts of Zafarwal. The enemy reacted strongly and sent in an armoured counter attack by two regiments of Pattons. However, Indian Centurians, making full use of the ground and holding their fire till the tank columns closed in to 900 yards range, proved the absolute superiority of the tank gunners. The 1965 story of Khemkaran was repeated in the battle. 45 enemy tank were knocked out during the day and night long battle on December 15/16. Indian losses were only 15 tanks. At the time of cease-fire, I Corps had advanced some 16/19 kilometres all along its front and had captured about 750 square kilometres of the enemy territory. The advance secured and ensured the security of the vital administration installations in the Pathankot area and the communication antenna from Pathankot to Jammu.

RAMGARH SECTOR :—In the territorial jurisdiction of Southern Command in the North-west of Jaisalmer in Rajasthan, 16 kilometres from the international border, lay the outpost of Longewala. It was held by one Infantry Company. A powerful Pakistani Force consisting of one infantry brigade, one armoured regiment of T-59 tanks and one squadron of Sherman tanks, one field regiment and one medium battery, together with logistic elements in support, was able to move 80 kilometers across the desert undetected on 3/4 December. At 0100 hours on December, 5, the enemy tanks were first noticed crossing the border. The post was later subjected to heavy artillery shelling by the enemy. The enemy's spoiling attack, however, failed and the Indian forces mounted the counter offensive. Indian counter offensive, the only one of the campaign to be launched in depth, was launched at two points. From the northern Jaisalmer sector, one column moved to capture Islamgarh. Unfortunately, the sands in this part of the desert were too treacherous to permit commitment of large forces or to offer an objective in depth. A more determined thrust was, therefore, launched along the old Bombay-Sind Railways axis.

SIND ACTION :- 'The task given to the Infantry Division was to draw out as much of the enemy reserves in this sector as possible and to cause maximum attrition to his forces deployed in the area. On the night of December 4/5, Indian troops moved into action. On December 5, they captured Relnor, Khokhrapar, Gadra City, Khisnar and Piranika Par. There was stiff fighting in Gadra city and Khisnar. However, the enemy suffered heavy casualties and lost considerable quantities of arms and ammunition. Immediate action was taken to repair and recommission the Munabo-Khokhrapar section of the railway line and work was also commenced to lay duck boards on the track along the railway line. The track beyond khokhrapar was found in an extremely bad condition. On December 8, the enemy forces covering Nayachor were contacted. By this time, enemy air had also become active and a number of attacks on the Indian vehicle columns were made and the railway line was also damaged. On December 13, a feature overlooking Nayachor was taken after a stiff fight. Three successive counter attacks subsequently launched by the enemy were also beaten. The enemy then started reinforcing this sector.

On December 14/15, the enemy moved one brigade and an armoured regiment to Nayachor. However, this reinforcement could be of no advantage to the enemy. By the time cease-fire came, Indian forces in this sector were in occupation of 7,000 sq. kilometres of the enemy territory. Meanwhile, Indian forces in the Kutch sector consisting of three Battalions of Border Security Force and one infantry battalion (TA) moved to Nagarparkar on December 9, and Virwah the following day. These positions were held by Indus Rangers. Vingoora was captured on December 10 and Chhad Bet Complex on December 12. The enemy losses in this action amounted to 336 killed, 97 wounded and 99 taken prisoner. Enemy also lost 26 tanks, either captured or destroyed, 20 guns were put out of action, 156 B Vehicles were destroyed or captured.

THE CEASE-FIRE :-At the time the Pakistani forces in the East surrendered, Indian operating forces in the west were deep into the enemy territory in all the sectors and were very much in a position to completely crush and kill the entire war-making potential of Pakistan. However, right at the start of the hostilities, India had made it clear that armed forces were moved into action not to occupy or hold any part of the Pakistani territory. The sole objective of the movement was to help liberate the people of BANGLA DESH and to resist Pakistani aggression, wherever it would come about in the Indian territory. In pursuance of this objective, India declared a unilateral cease-fire, making it conditional upon Pakistan accepting it within the specified time limit. Initial reports suggested that Pakistan was in no mood to accept the cease-fire and would continue fighting. However, as the time limit for acceptance drew nearer to the end, Pakistan announced its acceptance and all fighting in the Western Theatre also came to an end. However, troops of both the countries remained in their battle locations and they were required to remain so till the political settlement was achieved. The immediate reaction in Pakistan was that Zulfikar Ali Bhutto was summoned back from the United Nations, where he had been sent to present the Pakistani case and was installed as the President of what had remained of Pakistan. There were massive changes in the Command structure of the Pakistani Armed Forces. The greatest surprise of these changes was the emergence of General Tikka Khan, the 'butcher of Bangla Desh, as the Chief of the Army Staff. Politico-military commentators throughout the world were left guessing on 'what next'.

FOR FULL VALUE OF YOUR MONEY
BUY SURAJBANSI (REGD.)
FABRICS.

A wide range available in Suitings & Shirtings in Terene,
Terene/Wool and Other blended fabrics from
leading stores throughout the country.

Selling Agents:

M/s. Bhagmal & Son,

29, Bharat Bhavan,
468, Kalbadevi Road,
Bombay 2.

Tel. No. 316886

Gram : "SWASINDS"

Phone : 551810

SWASTIKA INDUSTRIES,
BOMBAY-400 072

Manufacturers of :-

Ventilation & Exhaust Systems,
Dust Collection Systems,
Pneumatic Conveyance Systems,
Material Handling Systems,
Fans for all Industrial Applications.

AIR OPERATIONS

THE war in the air started with the so called Israeli type pre-emptive strike launched by Pakistan on the Indian forward airfields at Srinagar, Avantipur, Amritsar, Pathankot and Fardikot, between 17.50 and 17.45 hours on December 3, 1971. However, vital intelligence had already reached the Indian Air Force authorities. They had all along expected that PAF would time its first attack at dusk, during the full moon period. Therefore, neither the senior commanders at Air Headquarters nor the local commanders at the far flung air fields and radar units, were taken by surprise. Actually, the Indian Air Force authorities had, in the meantime, dispersed the aircraft in very well camouflaged locations. The pre-emptive strikes, therefore, could not destroy any aircraft on the ground. They could also not cause any damage to any runway or put any radar unit out of commission. The pre-emptive strikes were latter followed by night bombing attacks on the Indian airfields at Amritsar, Halwara, Ambala Agra, Jodhpur, Uttarlai and Jamnagar. The attacks did not come in the expected strength. Further, they were so inaccurate that, barring Halwara, where the damage was minor and was quickly repaired, all other airfields remained fully operational.

INDIAN AIR FORCE IN ACTION:—Indian Air Force was in a high state of preparedness and could have easily reacted within couple of hours. However, the Indian Air Force authorities wisely decided to launch the counter attack after the lapse of about six hours. By this time, they estimated that the PAF interceptor force would have landed back after completing their futile combat air patrol missions. Immediately after taking to the skies, the Indian aircraft undertook to carry out the following missions (a) **IN THE EAST** :—Like the land and the sea forces, the main aim of the Indian Air Force in the East was to isolate Pakistani garrisons, avoid damage to the population which had already suffered heavily, to link up with the freedom fighters as rapidly as possible and to liberate Bangla Desh from the control of the occupation forces with the utmost speed and the minimum number of casualties. The specific missions of the Indian Air Force in this context were : (i) Swift neutralisation of the PAF element. (ii) Close support to the land forces to the maximum extent possible. (iii) Transport support operation to speed up the advance of the land forces (b) **IN THE WEST** :—In the West, the main role of the Indian Air Force was to draw as much of the Pakistani Air Force elements into the battle as possible, inflict the maximum punishment possible and, to that extent, prevent it from assisting the enemy in the West and the occupation forces in the East. Within this framework, the specific missions of the Indian Air Force in the West were : (i) Air defence of the Indian air space and of the air space over tactical area. (ii) Meeting the close support demands of the Army. (iii) Counter air operations to reduce the capability of the PAF (iv) Interdiction of enemy communications and supplies (v) Maritime reconnaissance to keep an eye on the enemy naval and merchant ship forces.

Taking the Pakistani Air Force by complete surprise, the Indian aircraft carried out their first attack by mid night. They attacked the Pakistani airfields at Murid, Mianwali, Chander, Sargodha, Shorkot Road and Masror (formerly called Mauripur) in the West and on the airfields at Tejgaon and Kurmitola in the East. The fact that the Indian aircraft could hit the targets freely and accurately

evidenced the complete absence of Pakistani aircraft over the Indian air space during the day light hours next day. Clearly the Indian Air Force had won a decisive victory in the first round.

During the fourteen days of air warfare that followed, PAF launched about 280 sorties. The bombing resulted in some loss of civilian life and property. However, it made no difference to the operational preparedness of the IAF. Minor damage was caused to the runways at Srinagar, Pathankot, Amritsar, Halwara and Agra. This was repaired quickly and the aircraft based at these airfields operated normally throughout the conflict. Two aircraft were lost on the ground *i.e.* one Vampire and one light aircraft. No radar unit was forced to go off the air. There was no loss of production in any part of the country. These facts stood out as a monumental example of the effective defence capabilities of the Indian Air Force. As against the Pakistani rate of sorties, Indian aircraft flew about 500 sorties every 24 hours against targets in Pakistan. The object of these sorties was to destroy as much as possible of the enemy's Air Force and to reduce its working capacity. In the East, the Indian Air Force was able to establish its complete superiority within the first 24 hours. Thereafter, the Indian fighter and bomber aircraft were able to devote their entire effort to knocking out enemy strong points, gun positions, tanks, vehicles and the like which obstructed the advance of the ground forces. Because Indian Air Force had complete freedom of the air, it was able to use unarmed helicopters and transport aircraft, to speed up the movement of troops, weapons and equipment over rivers and streams where bridges had been destroyed. In the West, however, there were problems which were never completely eliminated. Following were the main achievements in the various sectors.

Eastern Sector :—In the East, there were no major tank battles. However, Indian Air Force still claimed the destruction of eighteen tanks in this sector. Apart and aside of this, the main targets were vehicles, ships, gunboats, barges, gun positions and bunkers. These operations were undertaken in the air space completely free of enemy aircraft. The PAF had ceased to operate by the evening of December 6. The Indian air attacks were very effective and proved very helpful in speeding up the advance of the army in a terrain full of water obstacles. Opposed river crossing was ordinarily considered a very difficult land operation. However, Indian aircraft were always on hand to soften the opposition. In all the IAF flew over 1,300 sorties in close support role in the Eastern Sector. **Western Sector :—**The IAF flew over 1,500 sorties in support of the land operation in the Western sector. Maximum number of sorties were flown on the days when the fiercest land battles were fought in the Chhamb Sector in, Shakargarh sector and in Longewala sector. The IAF also helped the Army to hold the enemy in Hussainiwala-Fazilka sector. Throughout the period of hostilities, the IAF concentrated its attacks mainly on the enemy tanks and, in all, accounted for 130 tanks. It were the crippling air attacks which prevented the PAF from supporting the Pakistani offensive in the Chhamb Sector. Air attacks also inflicted crippling punishment to Pakistani tanks, convoys of vehicles, gun positions, PLO dumps, etc. It was mainly on account of the air pressure, that the enemy was thrown back to the western bank of the river the very next day and the enemy was not able to launch any other counter attack. In the Shakargarh sector, the Indian aircraft supported the operation in complete co-ordination and enabled the Army to throw the enemy tanks and troops on the western side of the Basantar river.

In the Longewala sector, the IAF, when called in to strike, went into action swiftly, maintained constant pressure and finally enabled the ground forces to push back the enemy. The IAF destroyed a total of 27 tanks in this sector. In the Kargil sector the joint army-air action was responsible for the capture of approximately 37 enemy strategic positions. The IAF was simultaneously active in Rahimyarkhan and Nayachor sectors in support of the Army.

COUNTER OPERATIONS:—The IAF flew about 1,100 sorties in counter operation with the objective of destroying enemy aircraft on the ground, enemy airfields, facilities necessary for operations of aircraft, radar units and POL and ammunition storage areas. Over 400 sorties were flown in the East and over 600 in the West. In the Eastern sector it was necessary to deny the enemy the two main airfields at Dacca (Kurmitola and Tezgaon) and six satellite airfields located nearer to the outer defence line of the Pakistani Army. The success of the Indian air effort could be seen in the fact that, within three days, the airfield at Dacca was completely out of commission. Before another three days were over, there was no airfield in the entire region which the enemy aircraft could use, in any role. However, attacks were continued later to ensure that no outside help would reach the enemy and they would have no escape routes. In the West, nearly one third of the 600 plus sorties were used up on the first day of the operations and a fair amount of pressure was maintained for the next seven days. The Indian Air Force had a very good idea of the deployment of the enemy Air Force and was, therefore, able to aim the attacks at bases definitely known to be in use. The operations proved so effective that, the rate of effort in terms of raids on Indian VPS averaged a mere figure of 19 per days. Indian land forces did not encounter very heavy air opposition at any other stage either.

TRANSPORT SUPPORT :—The Indian Air Force used its helicopters and transport aircraft extensively to air land troops and supplies during the war mostly in the Eastern sector. From December 7, helicopters began transporting troops, light guns, ammunition, and POL. In three days of operations, the helicopters flew over 120 sorties and lifted nearly 1,200 troops and 10,000 kgs. of load. Over 50 sorties were carried out during night. The biggest operations took place on December 11 and 12. On December, 11 alone, there were 160 sorties which carried nearly 1,300 troops and 6,000 kgs of load which included RCL guns, gun shells and mortars. The next day, there were 140 sorties which airlifted over 2,800 troops and 33,000 kgs of rations and ammunition. The helicopter operations continued at a rate of over 20 sorties per day right up to December 17. In the Western Sector, the helicopters carried critical items to inaccessible areas. Helicopters and light aircraft were also used for communication purpose. There was little troop movement by air before the outbreak of hostilities. However, after the outbreak of the hostilities, transport aircraft were used extensively for air dropping supplies and troops, mostly in the Eastern sector. It was for the first time that, the Indian Air Force airdropped troops under operational conditions. The achievement in Tangail areas emerged to be a major operation requiring complete co-ordination between the Army and Air elements. Its failure would have upset Army plans and might have allowed Pakistani army a breather.

OTHER SUPPORT ROLES :—The other important support roles that the Indian Air Force undertook were in the field of Maritime reconnaissance, intercepting tasks, air intelligence, particularly in regard to the strength and deploy-

WITH BEST COMPLIMENTS

FROM

BOMBAY PAINTS & ALLIED PRODUCTS LTD.

Manufacturers of

**"KANGAROO" & "PENTOLITE" BRANDS OF
PAINTS, ENAMELS, VARNISHES AND
HEMPEL'S MARINE PAINTS**

Office & Factory :

Corridor Road, Gavanpada, Chembur, Bombay 74

Phone: 522812-13-14

Grams: KANGAROO Bombay 71

*With our Warmest
Greetings to
All Officers and Men of
Our Gallant Armed Forces*

STEEL INDUSTRIES OF HINDUSTAN PVT. LTD.

STRUCTURAL & MECHANICAL ENGINEERS

MAGAZINE STREET, DARUKHANA
BOMBAY 10.

Phone: 373896

Grams: "FERROTYPES"
BOMBAY.

ment of aircraft, airfields and radar units, weapon systems and tactics. Mukti Bahini proved to be of invaluable assistance to the Indian Air Force in all these roles. Further the Indian Air Force carried out photo reconnaissance of VPs and VAs deep inside the enemy territory. This was particularly useful in the planning and execution of joint tasks. Equally important was the coverage provided to the Army in the tactical areas. Air support to the Navy consisted largely of maritime reconnaissance of the Bay of Bengal and the Arabian Sea, with patrolling all along the coasts. The operations went on around the clock and proved to be essential to the success of Naval blockade in the East and West. The Air force also ensured the neutralisation of the enemy air force prior to the Eastern Fleet approaching Chittagong. Thereafter, the Navy's ships and carrier-borne aircraft played a vital part in bringing about the collapse of the enemy in the region. Likewise, in the West, Navy's strikes on Karachi were closely co-ordinated with those of the Air Force. Indian Air Force also provided fighter cover for some elements of the Naval strike force which compelled the enemy aircraft to operate by day only.


NAVAL OPERATIONS

THE Fourteen Day War was the very first war after the dawn of independence in 1947, in which the Indian Naval Arm was called upon to play a key role in the operational role way. It was the Indian Navy's debut in warfare. Navy played the role with great panache. Navy's setting was as grand as the success was complete.


The Tasks :—According to initial Indian assessment the threats posed by the Pakistani Navy were : (a) Bombardment of coastal targets, particularly the threatened stretch along the Saurashtra coast. (b) Submarine and surface threat to Indian shipping and warships. (c) Sabotage and clandestine attacks on harbour installations and on ships in harbour. Pakistan was considered to have appreciable capabilities because of the Midget and Chariot submarines in its Navy. The Midget was a small submarine crewed by eight to ten men, with a sufficient long-range capacity to enable an attack on Bombay from a base at Karachi. The Chariot was less a submarine, in the conventional sense, than a human-controlled torpedo, which could be launched near the targets. It could be guided against an enemy ship with a delayed action fuse. Pakistani Navy was also known to have trained a special Service Group in foramen operations and the use of limpet mines. Under the circumstances the tasks given to the Indian Navy were : (a) The destruction of Pakistani Naval forces. (b) Capture or destruction of Pakistani Merchant vessels. (c) Ensuring the safety of Indian merchant ships and the naval control of all shipping. (d) Safeguarding against threats of naval bombardment and clandestine attacks. (e) Contraband control. (f) Isolation of East Pakistan and the port of Karachi. "See and destroy all enemy warships" was the Naval Chief's clear dictum. His clear orders were that links between the two wings of the enemy country must be clinched and no supplies permitted to reach his war machine in the East. The task was formidable because Pakistan had massive naval concentration in Karachi . . . seven powerful, modernised destroyers, a 6,000 ton light cruiser and a number of supporting ships. Two submarines were known to be operating in the Arabian sea. Karachi was a heavily defended port. There were several fighter squadrons based on the neighbouring airfields for the air defence of the city and the harbour complex. On the seaward side, there were rings of radar sets deployed to give

early warning of the approaching ships and aircraft. There were also sophisticated radar controlled guns and missiles to thicken up the anti-aircraft cover.


EASTERN SECTOR:—Long before the commencement of hostilities, the FOC-in-Chief, Eastern Fleet, anticipating the enemy attempt to send in submarines to destroy Indian warships in a surprise raid, had sent Vikrant out to sea in the northern end of Andamans Islands. As soon as Pakistan declared war, **within minutes of the declaration of war**, . . . the ships of the two Fleets and of the Southern Naval Area raced to their deployment stations. By 10.30 a.m. on 4th December, the Vikrant sent out her first flight of Sea Hawks to bomb Cox's Bazar. For the first time after the dawn of independence, the naval pilots had a chance to show their mettle. Being in fine fettle and 'raring to go', they acquitted themselves remarkably well. The attacks resulted in the destruction of vital airfield installations. The air traffic control tower was set on fire. A power house and wireless station were severely damaged and one fuel dump was set on fire. Hardly had the people in the country the time to receive the news of this daring assault and the greatest ever morale boosting victory, when steaming north, Vikrant reached within the bombing range of Chittagong by the afternoon the same day. Later in the afternoon, a second strike was launched on Chittagong harbour. Round the clock air attacks, by aircraft operating from the Eastern Fleet, on Chittagong and Cox's Bazar were continued for the next two days. Six enemy ships in the harbour were attacked by rockets and damaged. Further destruction on the airport at Cox's Bazar completely immobilised this vital cog in the war machine. Eastern Fleet also continued to pound East Pakistani targets. The ports of Khulna,




Rico APPLIANCES




**MAJESTIC
GRINDER-MIXER**
(Commercial &
Domestic use)
3 SPEEDS—30 minutes
continuous rating.




**ELEGANT
GRINDER-MIXER**
3 SPEEDS—
20 minutes cont. rating.




**DE-LUXE
GRINDER-MIXER**
2 SPEEDS—
10 minutes
continuous rating.




**REGULAR
GRINDER-MIXER**
Single Speed.
1 minute rating.




**ONION &
MASALA
CHOPPER**




AUTO-IRON
Luxury model




AUTO-IRON
Durable model



**HAIR
DRYER**
230 V
AC/DC



SLIMMER
Used for reducing
your Weight.



**SEWING MACHINE
MOTOR**
Also used in Industries

1. All products guaranteed for 1 year. 2. Spare parts readily and cheaply available.

Rico ... INDIA'S LEADING AND LARGEST-SELLING HOME APPLIANCES

Sole Selling Agents: **RAJEN ELECTRIC CO.** 95/205 Dadashheb Phalke Road, BOMBAY-14. Phone : 445327

Chalna and Mougla came in for a great deal of punishment. At Mougla, the aircraft, which experienced heavy anti-aircraft fire from gun boats, secured direct hits on four of these warships, destroying two and damaging two. One Pakistani merchant ship opened fire at the Indian aircraft at Khulna. This ship was attacked and damaged. A number of military installations in the port areas were also damaged. Attention was then switched back to Chittagong and Deohazar and Hathazar. One gun boat, military targets in the dockyard and the airfield at Chittagong were heavily hit. While yet these operations were in progress, a destroyer of the Indian operating force in the sector intercepted a Pakistani merchant ship off the Southern coast. This ship, SS PANI was proceeding from Chittagong to Karachi. She could not go far. A party of naval personnel boarded the ship and headed for Cochin. Reaching there, the Captain and the crew were taken in custody. At 1400 hours on December 4, 1971, the Government of India took the important maritime step of instituting **Contraband Control** by the ships of the Indian Navy. The order came in handy, because any neutral ship could be inspected with a view to ensuring that no outside help could reach the Pakistani-military machine while the conflict was on. In exercise of the powers conferred by virtue of this order, enemy ships were seized on the high seas and neutral ships were kept in due surveillance with a view to enforcing contraband control on the delivery of war supplies to the enemy. Indian Navy inspected more than 115 neutral ships, taking every care to avoid inconvenience to neutral ships. They also apprehended several Pakistani merchant ships in the Bay of Bengal area and headed for Indian ports. On or about December 9, 1971, reports were received at the Eastern Command Headquarters that enemy groups were escaping by the overland route through Cox's Bazar into Burma. In order to cut off their escape route, it was considered necessary to land a small force at Cox's Bazar. Unfortunately, the only landing ship (LST), then available, was out to sea. Nothing daunted the FOC-in-C to transport the force by a merchant ship. It was indeed a bold decision. A battalion and a half were hastily pulled out of battle from the Jessore front and put aboard SS Vishwaviyaya, an Indian merchant vessels of approximately 6,000 tons which then happened to be anchored in the Hoogly. Vishwaviyaya took the force to a point off the Cox's Bazar coast where the transfer took place. This was the first 'combined operations' landing ever made by the Indian Armed Forces.

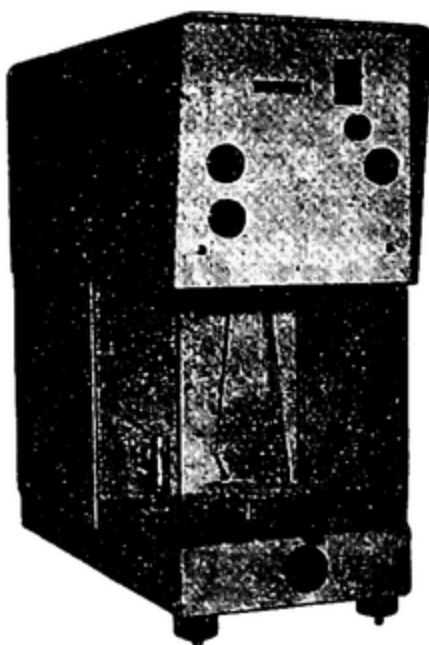
GHAZI SUNK :—GHAZI, a 94 meters long, 24,00 ton attack submarine had been given the task of immobilising the Indian Navy biggest submarine base at Vishakhapatnam. Its main mission was to destroy the Indian naval units and to keep the Arabian Sea clear for maintaining the supply lines from West to East Pakistan. The submarine had ten torpedo tubes and was loaned by the US without due authorisation. A Daphne-class submarine was to help Ghazi in a sneak attack to coincide with the Pakistani pre-emptive air strikes in the West. The whole mission misfired when Ghazi, which on December 8, night, was lurking off the entrance channel, was detected on the Sonar and attacked with depth charges. Around midnight, there was a loud underwater explosion. Window panes shattered the harbour areas. The pride of the Pakistani Navy appeared to have dived to its doom. The next morning, while naval authorities were investigating the areas with the help of local fishermen, one of them picked up a life jacket with American markings. Despite this, further investigations were continued. Over the next three days, some more flotsam came to the surface, which was taken

as additional evidence of the 'kill'. However, conclusive evidence was obtained on December, 8, 1971, when three bodies were picked up. From papers found floating on surface, it was clearly established that the sunken ship was the 'Ghazi'. It was later established that there were no survivors. The three bodies were accorded naval burial at sea on December 8, 1971. Summing up the success of the naval operations in the Bay of Bengal, the Authority proudly proclaimed: A Pakistani submarine **PNS GHAZI**, had been positioned outside the harbour of Vishakhapatnam to waylay the Eastern Fleet. It was detected within a few hours of the outbreak of hostilities and sunk. Another submarine was detected a couple of days later. It was pursued and believed to have been severely damaged. The port facilities of Chittagong, Khulna, Chalna and Maugla were put out of action by Sea hawks based on **INS Vikrant** which also struck at the airfields in the south of Bangla-Desh and disrupted the riverine supply routes of Pakistani garrison. All points of ingress into and egress from Bangla Desh by sea were sealed and the isolation of the occupation forces from their main base in West Pakistan was complete. The Eastern Fleet was thus able to carry out its assigned task. In these operations, Pakistan lost 12 gunboats and over a dozen other vessels. Two Pakistani merchant ships of a total tonnage of 16,500 were captured intact with cargo.

WESTERN FRONT :—Immediately after the outbreak of hostilities, the Western Fleet moved to inflict damage on the offensive capabilities of the Pakistani Navy. The Indian task force was assigned formidable task of approaching the Karachi coastline by night. This was despite the fact that it was likely to create difficulties about distinguishing between enemy and neutral shipping. Fortunately, this problem was solved by the Pakistanis themselves. They issued an order forbidding foreign ships from approaching within 75 miles of Karachi at night. Taking advantage of this order, the Indian Naval task Force moved. Soon after mid-night on the same night on December 5, (Sunday, which will always be remembered with gloom and despair by Pakistani Navy) occurred the most daring attack from the Indian side and most damaging to the enemy in recent naval history. Actually, it emerged to be the biggest sea battle since the Second World War, Maintaining radio silence, a Composite Task Force of the Western Fleet daringly approached the Karachi harbour at mid-night on December, 4/5, 1971. At about 30 kms out of the harbour, the radar screen picked up four echoes, two of which indicated fast moving ships. Swiftly the force moved in for the kill despite heavy gun fire from the opposition. One target was initially hit with the superb accuracy of the weapons system employed. It was subsequently seen visually bursting into flames. It was then lifted out of the water like a giant fish caught on the hook and seen beacking into two. Direct hits were later scored on the second target which was sometime later seen to disintegrate. The third target which was also initially hit and subsequently pounded, was rocked by tremendous explosives before it sank, engulfed in flames. The two of the battle ships sunk were later identified as the 2,500, ton "**Battle Class**" destroyer **Khaiber** (the pride of Pakistani Navy) and the 1,700 ton destroyer **Shahjehan**. Having eliminated the defences to the outer harbour, the Task Force approached Karachi at high speed and bombarded vital harbour installations. Fuel dumps were seen to blaze furiously and explode. The night's work done, the Task Force turned round and headed for home waters, having achieved outstanding success in the first attack. Western Command sent out another Task Force, four days later, to carry out yet another daring raid. This time, one unit of the force attacked Karachi, while a second engaged military targets on the Markan coast west of Karachi, right upto the

Iranian border, paying special attention to Gwadar, Pakistan's second largest port. During this action, three more enemy ships were damaged and the fuel tank farm was set ablaze. Unfortunately, the anti-submarine frigate, the KHUKRI, which had stayed behind to cover the withdrawal of the Task Force was sunk by an enemy submarine. INS KHUKRI was the only loss suffered by the Indian Navy in the entire conflict.

DEFENSIVE MEASURES :—Surface and under water threat from Pakistani ships and submarines and midgets were serious one. To counter it, constant vigilance had to be maintained by nights of the fleet at sea and by reconnaissance aircraft and helicopters from the air. Attempts had also to be made to seek out the enemy submarines and destroy them. In order to guard against sneak attacks by enemy submarines, immediately after the outbreak of hostilities, merchant ships were advised to proceed to the nearest neutral ports. Within three days, however, it was possible to guide them to safe channels. For the resumption of their normal activities, coastal traffic was suspended by night, but all coastal movements received full protection during day time. The Indian Navy was able to provide complete protection to the ports which continued to function normally throughout the conflict. Neutral shipping bringing cargo to Indian ports remained unaffected. Throughout the period, the Director General of Shipping, Port Trust Authorities, the Customs and Police Authorities and merchantile shipping lines extended whole hearted co-operation and co-ordinated their activities, so as to keep the shipping lines and cargo movements from free interference by the Pakistani Navy. The Captains and crew of Indian merchant ships showed great deal of understanding and resilience and helped the Naval authorities in carrying out their protective tasks.



SINGLE PAN BALANCE

Principal Distributors of
K. ROY make.....
SINGLE PAN BALANCE

and
K. ROY make

All kinds of :

- ANALYTICAL BALANCES
- PHYSICAL BALANCES

available from stock.

Also

Importers & Dealers of

MODERN SCIENTIFIC INSTRUMENTS

ADAIR-DUTT & CO.
(INDIA) PRIVATE LTD.

SYNDICATE BANK BUILDING,
26-A, SIR P. MEHTA ROAD,
BOMBAY-1. TEL 263558

Regd. Office:- 6, DALHOUSIE SQUARE,
EAST, CALCUTTA-1.

BRANCHES :

MADRAS-NEW DELHI-SECUNDERABAD.

SAGAR

SHIPS BETWEEN 1,400 AND 3,800 D. W. TONNES

AT YOUR DISPOSAL

FOR

QUICK MOVEMENT OF YOUR
CARGOES ON WEST COAST
AND ADJACENT TRADE OF

INDIA

**The Merchant Steam Navigation
Company Private Limited**

AND

**The Africana Company Private
Limited**

289/93. NARSHI NATHA STREET
BOMBAY-9

TELS:- 336451
323052 GRAMS. "OMFLAG"-TELEX. 2335

CHAPTER 15

ON THEIR SHOULDERS

MILITARY AWARD WINNERS OF THE FOURTEEN DAY WAR AGAINST PAKISTAN

VICTORIES in wars have always been dependent upon a number of factors . . . motivation to war, quality of manpower, morale, organisation and administration, command and decision and finally the training standards of the officers and other ranks. It has always been difficult, if not entirely impossible, to pick one as the more important and the most decisive. However, in all wars, there have been officers and other ranks who, by their exceptional daring, courage, determination, presence of mind and endurance potential on the field of battle, have provided rare and outstanding command capabilities and operational brilliance and have, thereby, moved into the pages of history as examples to be followed and models to be copied. Honourable the East India Company was the first government in the world to originate the practice of awarding medals to commemorate successful campaigns and they issued a vast variety of medals. This practice has since been followed by all the Governments of the world. In pursuance of this practice, the Government of India instituted the following awards after the dawn of independence in 1947 . . . some in the presence of the enemy and others other than in the presence of the enemy. Following are the officers and other ranks of the three Services who have won the awards and have contributed decisively to the lifting of the Indian Armed Forces to the rank of being the finest in the world today.

IN THE PRESENCE OF THE ENEMY : **Param Vir Chakra :** Awarded for acts of most conspicuous bravery of some daring or pre-eminent act of valour or self-sacrifice in the presence of the enemy. **Maha Vir Chakra :** Awarded for

“ORISSA”

“I cannot miss,” says the *tourist*.
The *Philosopher* is spell-bound
with her spiritual height.
She has a permanent invitation
to the *industrialist*.
She is a paradise
for the *investors*
To Know ORISSA

SEE ORISSA

in the famous golden
triangle of India

**BHUBANESHWAR—
KONARKA—PURI**



Jagannath Temple

Puri : Famous for the temple for Lord Jagannath. “Puri is still to my mind one of the finest bathing resorts in the world.” (Galbraith)



Konarka Temple

Konarka : The Sun Temple, “Where the language of man has been defeated by the language of Stone.” (Tagore)

Lingaraj Temple

Bhubaneshwar : A city of temples, Lingaraj, Rajarani Mukteshwar, Vaitala & hundreds of others majestic in their architectural elegance.



For Facilities & Assistance : Please contact Tourist Information Bureaux of Government of Orissa at Bhubaneshwar, Puri, Konarka, Rourkela, Bala-sore, Sambalpur & Bombay.

Issued by

DIRECTOR OF PUBLIC RELATIONS AND TOURISM

Government of Orissa, Bhubaneshwar.

acts of conspicuous gallantry in the presence of the enemy. **Vir Chakra** : Awarded for acts of gallantry in the presence of the enemy.

OTHER THAN IN THE PRESENCE OF THE ENEMY : **Ashoka Chakra** : Awarded for most conspicuous bravery or some daring or pre-eminent act of valour or self-sacrifice otherwise than in the face of the enemy. **Kirti Chakra** : Awarded for most conspicuous gallantry otherwise than in the face of the enemy. **Shaurya Chakra** : Awarded for acts of gallantry otherwise than in the face of the enemy.

DISTINGUISHED SERVICE AWARDS : **Param Vishisht Seva Medal** : Awarded for distinguished service of the most exceptional order. **Ati Vishisht Seva Medal** : Awarded for distinguished service of an exceptional order. **Vishisht Seva Medal** : Awarded for distinguished service of a high order. **Sena Medal** : **Nao Sena Medal**: **Vayu Sena Medal**: Awarded to all ranks of Army, Navy and Air Force respectively for such individual acts of exceptional devotion to duty or courage as have special significance for the Service concerned. **Meritorious Service Medal and Long Service and Good Conduct Medal**: (With and without gratuity) : Awarded to selected NCOs and ORs in the Army (and equivalent ranks in the Navy and Air Force) for 15 years meritorious and long service which counts for pension or gratuity. **Unnat Raksha Suraksha Corps Medal and Raksha Suraksha Corps Medal**:—Awarded to selected NCOs and ORs who have rendered a minimum of seven years service in the DSC and fifteen years combined service in the DSC and the Armed Forces. **Territorial Army Decoration** : Awarded to Commissioned officers of the Territorial Army for 20 years meritorious service and who are recommended. **Territorial Army Medal** : Awarded to JCOs, NCOs and men of the Territorial Army for twelve years service with a minimum of twelve years training and who are recommended. **Mention-in-Despatches**: Awarded for distinguished service and meritorious service in operational areas and acts of gallantry which are not of a sufficiently high order to warrant the grant of gallantry decorations. **COAS's/CNS's/CAS's Commendation Card(s)** : Awarded to all ranks of the Army, Navy and Air Force for individual acts of gallantry or distinguished service or devotion to duty performed in operational or non-operational areas which are not of a sufficiently high order to qualify for a higher gallantry award or for which the higher award is inappropriate.

CAMPAIGN STARS/MEDALS : **General Service Medal 1947** : Awarded for service rendered under active service conditions or conditions akin thereto. An individual qualifying for the medal for the first time is awarded the medal together with a clasp/indicating the particular operation for which it is awarded. For all subsequent operations for which the issue of clasp is approved, the clasp indicating the particular operation only is awarded. The bar of the clasp will have the name or the place of the operation engraved on it. Following clasps to this medal have so far been instituted : **Clasp "J & K-1947"** : Awarded for service on the active strength of a unit/formation operating or located in specified operational or concessional area in J & K. (a) 180 days service between 27 Oct. 1947 and 1 Jan. 1949. (b) 1 day service who took part in specified battles or visited battle zones during specified period. (c) 5 operational sorties or 20 hours of flying on operational sorties, during the specified period. **Clasp "Over-**

seas, Korea 1950-53" : Awarded for operational service on the active strength of the 60th. Para Field Ambulance unit in Korea. 1 day ashore, in the political territory of Korea between 22 November 1950 and 8 July 1953. **Clasp "Naga Hills"** : Awarded for operational service on the active strength of the unit or formation located or operating in Naga Hills and Tuensang Area. (a) 180 days (90 days in the case of temporary inductees) from 27 April 1955, or thereafter. (b) 5 operational sorties or 20 hours of flying on operational sorties during the specified period. **Clasp "Goa 1961"** : Awarded for service in the Goa operations, 1961. (a) 2 days service between 18 and 22 Dec. 61, within the territories of Goa, Daman and Diu. (b) 1 sortie during the specified period. **Clasp "Ladakh-1962"** : Awarded for service in operations against the Chinese forces in 1962 on the northern borders (Ladakh): (a) 15 days service in the geographical limits of Ladakh from 20 Oct. 62 to 21 Nov. 62. (b) 1 day service in specified battle zone. (c) 1 operational sortie in specified battles or 3 operational sorties or 12 hours of flying over the qualifying operations areas during the specified period. **Clasp "NEFA-1962"** : Awarded for service in operations against the Chinese forces in 1962 on the northern borders (NEFA). (a) 15 days service in the geographical limits of NEFA and certain specified areas of Assam from 21 Sept. 1962 to 21 Nov. 1962. (b) 1 day service in specified battles. (c) 1 operational sortie in battles or 3 operational sorties or 12 hours of flying over the qualifying operational areas during the specified period. **Clasp "Mizo Hills"** : Awarded for service in Mizo Hills. **Samar Seva Star 1965** : Awarded for operational service during Indo-Pak conflict of 1965. (a) 10 days active service between 5 Aug. 65 and 25 Jan. 66 in a unit/formation operated or located in the qualifying areas. (b) 1 day service in specified battle zone during the specified period. (c) 3 operational sorties or a total of 5 operational flying hours (for personnel of Air Observation Post units) or 3 flights or a total of 10 operational flying hours, for others.

COMMEMORATIVE OR OTHER MEDALS : Indian Independence Medal :

Awarded to all ranks of Armed Forces to commemorate the attainment of Independence by India on 15 August 1947, on the authorised strength of a military unit/formation on 15 August 1947. **Raksha Medal 1965**: Awarded to all ranks of Armed Forces in recognition of service during the conflict with Pakistan in 1965. 180 days or more service on 5th August 1965. **Sainya Seva Medal**: Awarded for the recognition of non-operational service under conditions of hardship and severe climate in certain specified area. A person qualifying for the medal for the first time is awarded the medal together with a clasp. On subsequent occasions when the award is made, only a clasp indicating the place where the service was rendered is awarded. Following clasps to this medal have so far been instituted :— **Clasp "J & K"** : Awarded for non-operational service in J & K, except the areas specified for the clasp "HIMALAYA." (a) 1 year aggregate service commencing from 27 Oct. 47 or thereafter. (b) 10 sorties or 40 hrs. of flying. **Clasp "NEFA"** : Awarded for non-operational service in the geographical limits of NEFA, excluding the areas prescribed for clasp "HIMALAYA" (a) 1 year aggregate service commencing from 15 August 47 or thereafter. (b) 10 sorties or 40 hours of flying. **Clasp "Himalaya"** : Awarded for duties connected with the defence of the northern borders (certain area of NEFA, UP, Tibet borders, and J & K and the whole of Sikkim). (a) 1 year aggregate service from the date of entry into the specified areas. (b) 10 sorties or 40 hours of flying. **Clasp "Andaman & Nicobar"** : Awarded for service in the geographical

limits of Andaman and Nicobar. (a) 1 year aggregate service commencing from 20 May 56 or thereafter. (b) 50 hours of flying Clasp "Bengal—Assam" : Awarded for service in certain specified areas of Bengal and Assam.

VIDESH SEVA MEDAL : Awarded for such service abroad as may be recognised from time to time by the Government for the purposes of this award and which has not been considered for any other Indian Medal. An individual qualifying for the medal for the first time is awarded the medal, together with a clasp on which is inscribed the place where the service was rendered. On all subsequent occasions when the award is made, only a clasp indicating the place where the service was rendered is awarded. Following clasps to this medal have so far been instituted :— Clasp "UAR" : Awarded for service rendered with UNEF. 180 days service from Nov. 2 to 6 or thereafter. Clasp "Ethiopia" : Awarded for service rendered: (a) On staff of HAILLE SELLAISSIE I Military Academy. (b) On deputation to the Government of Ethiopia for employment with the Imperial Body Guard Training Centre. (a) 180 days service from 3 May 57 or thereafter. (b) 180 days service from 24 Sept. 61 or thereafter. Clasp "Ghana" : Awarded for service rendered on deputation to the Government of Ghana. From 23 March 1959 or thereafter. Clasp "Indo-China" : Awarded for service rendered on the staff of ICSC. 90 days service from 7 Aug. 54 or thereafter. Clasp "Indonesia" : Awarded for service rendered on deputation to the Government of Indonesia. Clasp "Iraq" Award for services rendered on deputation to the Government of Iraq. 180 days service from 10 Nov. 59 or thereafter. Clasp "Korea" : Awarded for service rendered on the strength of NNRC or Custodian Force (Personnel awarded clasp "Overseas Korea 1950-53" or GS Medal 1947 are not eligible for this clasp). 90 days service from 22 Nov. 1950 to 17 March 1954. Clasp "Lebanon" : Awarded for service rendered with the UN Observer Group in Lebanon. 90 days service from 19 June 58 to 12 Dec. 58. Clasp "Nepal" : Awarded for service rendered — (a) with units/formations employed on construction of Tribhuvan Rajpath and airfields in Nepal. 180 days service from 15 April 52 to 15 April 1958. (b) In connection with the provision of signal communication for the Government of Nepal; 90 days service from 26 Nov. 1958 to 3 May 1959. (c) With the Indian Military Training Mission or the Indian Military Training Advisory Group in Nepal; 180 days service from 1 Aug. 1952 or thereafter. (d) As a member of the ejection crew of air despatch units on transport support roles in Nepal. 6 sorties or 24 flying hours from 1 April 1952 or thereafter. Clasp "Nigeria" : Awarded for service rendered on deputation to the Government of Nigeria. From 2 Dec. 1963 or thereafter. Clasp "Congo" : Awarded for service rendered — (a) with the UN forces in Congo. (a) 180 days service from 2 Aug. 1960 or thereafter. (b) As a member of the ejection crew of air despatch units on transport support roles over Congo. 6 sorties or 24 hours of flying from 2 Aug. 1960 or thereafter. Clasp "Bhutan" : Awarded for service rendered — (a) with the Army Team in Bhutan; (a) From 27 May 1961 to 22 Sept. 1961; (b) with the Indian Military Training Team in Bhutan: 180 days service from 27 Aug. 1962 or thereafter. (b) With a unit/formation employed on construction of roads in Bhutan. 180 days service from 8 April 1961 or thereafter. **9 and 20 years Long Service Medals:** Awarded to all ranks of Armed Forces for 9 and 20 years and more unblemished service.

WITH WARMEST GREETINGS
TO

ALL OFFICERS AND MEN
OF ARMY • NAVY • AIR FORCE
AND AUXILIARY ARMS

DIWAN BROTHERS

51 NAGDEVI STREET, BOMBAY-3.

Phone: 321361

Grams: ALLBELT

STOCKISTS

GOOD YEAR

BELTINGS — V-BELTS — HOSES — LINK BELTS

**ALSO;- BEARINGS, FLAT & V PULLEYS—
FLEXIBLE COUPLINGS**

AND

PLIOBOND ADHESIVES

PADMA VIBHUSHAN (Civilian)**GENERAL SAM HORMUSJI FRAMJI JAMSHEDJI MANECKSHAW, MC**

GENERAL Sam Hormusji Framji Jamshedji Maneckshaw, Chief of the Army Staff, India, since 8th June, 1969, rendered signal service to the nation by forging the Indian Army into an efficient instrument for the defence of the country against external aggression. In his capacity as **Chairman of the Chiefs of Staff Committee**, he co-operated with the Chief of the Air Staff and the Chief of the Naval Staff in welding the Defence Forces into a well-knit team. The success of Indian Army in the recent conflict with Pakistan was the result of careful planning and co-operation on his part. General Maneckshaw was responsible for developing close co-operation with the liberation forces of Bangla Desh. His guidance and direction were invaluable in securing the capitulation of the Pakistani Army in the Eastern Zone and in speedy restoration of normalcy there. The decisive defeat of Pakistan and the liberation of Bangla Desh at a comparatively small cost in terms of men and material, ranked as an outstanding achievement in the annals of military history. In the Western Borders, General Maneckshaw's deployment of forces and conduct of operations frustrated the enemy's offensive designs and forced him to fight on his soil in Sind, in Punjab and in Kashmir. The enemy was out-gunned and out-generalled. The decisive results achieved by the Indian Army, under the able general General Maneckshaw, have given the nation a new sense of confidence.

ADMIRAL SARDARILAL MATHRADAS NANDA, PVSM

ADMIRAL Sardarilal Mathradas Nanda, Chief of the Naval Staff, India, since 1st March 1970, has forged the Indian Navy into an efficient striking force and brought it to the pinnacle of its achievements during the recent conflict with Pakistan. Admiral Nanda personally directed the re-organisation of the Indian Navy and guided the training of its officers and men. Under his able direction, the Pakistani fleet was contained in its harbours and prevented from hitting at our shipping and at our ports. The Western Fleet mounted two daring attacks, in which port and shore installations at Karachi were severely damaged and the strength of the Pakistani fleet was seriously crippled. The Pakistani Naval craft in Bangla Desh and the Bay of Bengal were severely mauled. The Pakistani occupation forces were cut off from their sources of supply and their escape routes were effectively sealed. The Eastern Fleet provided close support to the combined operations in Bangla Desh and to the liberation struggle. Admiral Nanda's strategy made it possible for the Indian Navy to dominate, both the Bay of Bengal and the Arabian Sea of Pakistani coast. Pakistani ports were effectively blocked and a number of ships carrying contraband to Pakistan were intercepted. Our own ports remained open to all merchant shipping and the plans of the Pakistani Navy to interfere with our merchant shipping on high seas were effectively frustrated.

THEY CARRIED US TO THE GREAT GLORY

GENERAL S.H.F.J. MANECKSHAW
Chief of the Army Staff



ADMIRAL S. M. NANDA
Chief of the Naval Staff



**AIR CHIEF MARSHAL
P. C. LAL**
Chief of the Air Staff

AIR CHIEF MARSHAL PRATAP CHANDRA LAL, DFC

A FEARLESS and able pilot himself, Air Chief Marshal Pratap Chandra Lal, Chief of the Air Staff of India, from 16th July, 1969, worked assiduously to improve defensive and offensive capabilities of the Indian Air Force. By his precept and example, Air Chief Marshal P. C. Lal imbued in the airmen a high sense of discipline and devotion to duty. When the enemy Air Force launched preemptive attacks on our airfields and ground installations on the western border, in the afternoon of December 3, the response of the Indian Air Force was prompt and effective. The enemy's plans to cripple the Indian Air Force were frustrated. The Indian Air Force struck without interruption by day and night at aircraft on the ground, at airfield installations, runways and radar stations. The enemy Air Force in Bangla Desh was completely annihilated within two days of the start of the operations. On the western side the losses inflicted on the enemy compelled a drastic reduction in the strength and scale of his operations. The Indian Air Force provided close support to our ground forces and the Navy. Tactical employment of personnel and aircraft had to be done with meticulous care. Air Chief Marshal Lal achieved notable success in planning and co-ordinating operations of the highly complicated nature. Troop concentrations were broken up and armoured columns were scattered. The magnificent performance of the Indian Air Force under the leadership of Air Chief Marshal P. C. Lal contributed greatly to the liberation of Bangla Desh and to the defeat of enemy's offensive plans on the western front.

Furnace Manufacturing Co.

MANUFACTURERS OF:

"HEATREAT" ALL TYPES OF ELECTRIC RESISTANCE HIGH TEMPERATURE FURNACES LABORATORY AND INDUSTRIAL TYPE-FOR ANNEALING, CARBURIZING, TEMPERING, HARDENING, ETC. LABORATORY AND INDUSTRIAL OVENS AND DRYERS FOR COLOURS, PAINTS, DRUGS, ETC., DIAL THERMOMETERS, THERMOCOUPLES, PYROMETERS, ETC.

HEAD OFFICE:

12-12A-Nanji Building, 17, Horniman Circle, Fort, Bombay-1.

FACTORY:

Laxmi Woollen Mills Compound, Western Railway Stores Lane, Off Haines Road, Bombay-11.

BRANCHES:

MADRAS, DELHI, BANGALORE, KANPUR.

Tel. { 251627 Office
376704 Factory

Telegram
COVERNOTE

OUR

**GALLANT ARMED FORCES WHO
HAVE SERVED THE COUNTRY
"THE BEST"**

WE

**HAVE SERVED THE ARMED
FORCES TO THE BEST OF
OUR STRENGTH AND RESOURCES**

**WE ARE COMRADES-IN-ARMS IN THE
SERVICE OF OUR GREAT COUNTRY**

JANAK MANUFACTURING WORKS

ANTOP HILL, WADALA EAST, BOMBAY-31

ON RATE CONTRACT WITH D. G. S. D.

ITEMS ALLOTTED

- 1 (a) BEDSTEADS
 - 2 BED FOWLER'S
 - 3 (b) BED-SIDE LOCKER
 - 4 (a) PATIENT TROLLEY
 - 5 (b) STRETCHER (CANVAS)
 - 6 INVALID WHEEL CHAIRS

Phone. — 440171

PADMA BHUSHAN (Civilian)**LIEUTENANT GENERAL GOPAL GURUNATH BEWOOR, PVSM**

LIEUTENANT GENERAL Gopal Gurunath Bewoor, General Officer Commanding-in-Chief, Southern Command, was the Army Commander responsible for the planning and conduct of operations in the Rajasthan and Kutch Sectors during the recent Indo-Pakistan conflict. Operations in this terrain were characterised by great impediments to movement in almost trackless desert, where manoeuvre by large formations was extremely difficult, as wheeled vehicles, other than jeeps, could not be moved for either build up of forces or for their maintenance. In the Jaisalmer Sector, the enemy launched a strong force of infantry and armour in order to hit at the important base at Ramgarh. However, under the able stewardship of Lieutenant General Bewoor this intruding force was successfully intercepted at Longewala. With the co-ordinated actions of the Air Force and ground troops the enemy was made to pay so heavily in tanks vehicles and troops that his offensive capability in this sector of operations was blunted for the duration of the conflict. By his inspiring leadership, offensive spirit and untiring energy, he pressed his attack into enemy territory with relentless vigour and secured over 3,400 square miles of enemy territory without any loss of our territory. Through his personal charm and effective liaison, he got maximum co-operation from the Air Force for support of ground operations. In spite of the difficulties of terrain and movement, Lieutenant General Bewoor's organising ability and high qualities of leadership ensured success of our operations in this sector.

LIEUTENANT GENERAL KUNHIRAMAN PALAT CANDETH, PVSM

LIEUTENANT GENERAL Kunhiraman Palat Candeth, General Officer Commanding-in-Chief, Western Command, was the Army Commander responsible for the conduct of operations against Pakistan in Punjab and in Jammu and Kashmir during the Indo-Pakistani conflict. During these operations, he had under his command, three Corps fighting simultaneously over an extremely extended front and in terrain varying from almost desert in the south to high altitude and snow-covered areas in the north. The operations in Western Command started with the massive Pakistani attack with infantry and armour in the Chhamb Sector aimed at severing our vital communications in the area of Akhnur. Under the leadership and direction of Lieutenant General Candeth, his troops absorbed the Pakistani attack, subjected him to a great deal of attrition and eventually threw him back across the Munawar Tawi with heavy losses to the enemy. He planned and conducted operations in Kargil, Poonch, Sialkot, Shakargarh and Dera Baba Nanak areas. These operations resulted in casualties to the enemy in infantry and armour, greatly improved the security of our lines of communications and secured large areas of Pakistani territory. In the execution of these operations, the Army Commander showed doggedness, determination initiative, offensive spirit and outstanding leadership. His inspiring leadership enthused the troops into acts of tremendous gallantry; the defensive battle in the Chhamb sector and the successful attack at Dera Baba Nanak were two examples

of this. Under his able stewardship, his subordinate commanders and men showed a great deal of confidence and high morale. By his personal charm and professional qualities, he ensured extremely effective co-operation and support by the Air Force throughout these operations.

LIEUTENANT GENERAL JAGJIT SINGH ARORA, PVSM :

LIEUTENANT General Jagjit Singh Arora, was the General Officer Commanding-in-Chief of Eastern Command since 1969. During this period that part of our country had a series of crises and complex law and order problems. There were the annual floods in Assam and West Bengal; counter insurgency operations continued in Nagaland and Mizo Hills, the situation in Western Bengal constantly called for assistance from the Army for the maintenance of law and order. In all these tasks, our security forces, under the overall command of Lieutenant General Jagjit Singh Arora, achieved outstanding success. During March 1971, the disturbed situation in West Bengal created a serious impediment in the way of holding the mid-term poll. The Army was called in to maintain law and order to enable the electorate to cast their votes without fear or intimidation. This task involved the closest liaison and co-ordination with all civil agencies, acquisition and evaluation of intelligence, large scale movement and deployment of troops and finally close and effective control over-all security forces in the State to ensure smooth and impartial polling. Under orders of Army Headquarters, this unique operation was planned and executed by Lieutenant General Jagjit Singh Arora with outstanding success in a very difficult and explosive political atmosphere.

In March 1971, the Eastern Theatre faced a human upheaval unprecedented in history. The crack down by the Pakistani Army in Bangla Desh and the influx of nearly 10 million refugees into India created a multitude of problems. Apart from ensuring the security and integrity of our Eastern Borders, the Army was called in to maintain law and order and assist in the setting up and organising the refugee camps. Lieutenant General Jagjit Singh Arora, handled all these tasks with outstanding determination, imagination, resilience and organising ability. He displayed high qualities of leadership under very difficult conditions and maintained excellent liaison and relations with the civil administration in that theatre.

Lieutenant General Jagjit Singh Arora was the Army Commander responsible for the conduct of operations in the Eastern Sector in the recent India-Pakistan conflict. Even before the actual hostilities were sparked off by Pakistani air strikes on 3rd December 1971, the Eastern Sector had been active for some time because of the Pakistani build-up on our borders, shelling, snipping and incidents of incursions. During the actual operations, Lt. Gen. Arora conducted operations into Bangla Desh, covering a very wide front in difficult terrain where operational movement and logistics were hampered by poor communications and numerous water obstacles. He had under his command operating simultaneously three Corps, a large number of BSF troops and all the Mukti Bahini troops. He was responsible initially for defensive operations to ensure the integrity of our Borders with Bangla Desh and subsequently for offensive operations across the Border

from various directions into Bangla Desh. These operations involved co-ordination and close co-operation with the Navy and the Air Force. Lt. Gen. Arora conducted these operations with professional skill, great resilience and imagination resulting in heavy losses in troops and equipment to the Pakistani Army and to the final historic fall of Dacca and the surrender of Pakistan's entire armed forces in Bangla Desh... all in the short span of 13 days. In the conduct of these operations, Lt. Gen. Arora displayed qualities of leadership, organising ability, offensive spirit and determination of the highest order. During this sharp conflict, he inspired his troops by his presence and personal example. Those outstanding services directly contributed to the defeat of the Pakistani occupation forces in the Eastern theatre and the liberation of Bangla Desh.

LIEUTENANT GENERAL SARTAJ SINGH, G.M.

LIEUTENANT Gen. Sartaj Singh was the General Officer Commanding XV Corps during the recent India-Pakistani conflict and was responsible for the defence of the State of Jammu and Kashmir. The terrain in this area varied from the plains and foothills to snow covered mountains and high altitude areas up to 18,000 feet. Communications in the mountaineous and high altitude areas were difficult involving the employment of a combination of mechanical transport, animal transport and manpacks. Some areas were so isolated that maintenance was possible only by air. Lt. Gen. Sartaj Singh showed outstanding ability in planning and co-ordinating operations over this vast Sector, including a highly effective system for logistical support. During the conflict, the main weight of the enemy's offensive was thrown against Chamb and Poonch. It was largely due to the foresight, planning, indomitable courage, exemplary leadership and offensive spirit of Lt. Gen. Sartaj Singh that the enemy's offensives were blunted in both sectors, with heavy losses to Pakistan. He had so enthused his troops and imbued them with so much offensive spirit that they mounted offensives and captured enemy territory, including a number of Pakistani posts in the high altitude areas. Throughout these operations this General Officer was calm, steadfast and importurable; his tireless energy and inspiring presence ensured that our troops carried out their allotted tasks effectively. His relations with the civil authorities and the overall co-ordination of all security arrangements in Jammu and Kashmir were outstanding.

LIEUTENANT GENERAL SAGAT SINGH, PVSM :

LIEUTENANT Gen. Sagat Singh was the General Officer Commanding IV Corps in the Eastern Sector during the Indo-Pakistan conflict of 1971. At the very outset, his assignment involved a re-organisation of his Corps Headquarters, the establishment of a lighter and mobile Headquarters, in Tripura and detailed planning of operations and logistical support. He worked with great enthusiasm, zeal and efficiency completing this task admirably, both tactically and administratively. During operations, he showed tremendous energy, great tactical ability and exemplary offensive spirit. He conducted operations with drive and confidence and established moral domination and superiority over the enemy-right from the beginning. He showed great imagination, tenacity and flexibility. He reacted swiftly to changing situations and exploited them to the

fullest. The speedy crossing of the Meghna River was due primarily to his foresight, sound judgment and tactical ability. His energy, drive and co-operation with the Air Force enabled our troops to be built up rapidly across the River. His conduct of these operations was extremely commendable and contributed considerably to our overall success and speed in the defeat of Pakistani troops in Bangla Desh. Lt. Gen. Sagat Singh, displayed professional ability, leadership and devotion to duty of a high order.

VICE-ADMIRAL SURENDRA NATH KOHLI, PVSM (IN)

VICE-ADMIRAL Surendra Nath Kohli, Flag Officer Commanding-in-Chief, Western Naval Command, was responsible, not only for all Naval operations in the North Arabian Sea, but was also entrusted with the defence of most vulnerable portion of our coastline from the borders with West Pakistan to Goa. In addition, he was the controlling authority for the safe routing of the entire Indian Mercantile Fleet comprising almost 300 ships. Vice-Admiral Kohli demonstrated exceptional ability, sagacity and fortitude in putting into effect the several plans for the defence of our harbours and coastline. He executed offensive naval operations with such a telling effect that the enemy was denied the use of their only port of Karachi which served as the most important centre for the entry of strategic material and war supplies from outside Pakistan. In a series of determined and decisive actions, the sea-going forces of the Western Naval Command denied the enemy the use of the North Arabian Sea for both naval operations and transit of his seaborne trade. This, in turn, had a decisive effect on the enemy's ability to prolong the war. It was also as a result of these actions that, not a single Indian Naval ship was molested by the enemy while, in turn, the Western Fleet sank or crippled a number of enemy warships.

VICE-ADMIRAL NILKANTA KRISHNAN, PVSM, DSC (IN)

VICE-ADMIRAL Nilkanta Krishnan, Flag Officer Commanding-in-Chief, Eastern Naval Command, was responsible for the conduct of sea and sea borne operations throughout the eastern theatre of war. Admiral Krishnan displayed remarkable sagacity and foresight in the execution of war plans and the conduct of naval operations in the Bay of Bengal. His dominant leadership and masterful control of naval operations brought about the destruction of Pakistani Naval surface and submarine forces in the area. He also ensured a complete blockade of enemy held ports of the Eastern Sector. The undisputed control of the Bay of Bengal achieved by the Naval forces operating in this area contributed significantly to the surrender of Pakistani forces in Bangla Desh.

AIR MARSHAL MINOO MORWAN ENGINEER, PVSM, MVC, DFC :

AIR MARSHAL Minoo Morwan Engineer was the Air Officer Commanding-in-Chief of Western Air Command, during the recent operations against Pakistan. He assumed the command in August 1969, bringing to it a wealth of knowledge and first hand combat experience gained during World War II and the Kashmir Operations of 1947/48. He was also Deputy Chief of

Air Staff during the conflict with Pakistan in 1965. The Command was extensively re-organised under Air Marshal Engineer's guidance during 1970. The plan that he evolved for the deployment of his forces and their employment in war enabled for the Command to provide defence against air attacks for the vital areas along our Western border, to strike deep into enemy territory and give support to the Army in the field. Bases of Western Air Command were the first to be attacked when Pakistan launched its war against India on 3rd December 1971. They withstood the pre-emptive strike with no damage to their aircraft and replied, within hours, with much heavier raids on Pakistani air bases. In the course of the war, heavy damage was inflicted on Pakistan's Air Force. Its oil supplies and railway system were seriously damaged and, with virtual command of the air over tactical areas, full support was given to our own Army in the field. The outstanding performance of Western Air Command was due, in great measure, to Air Marshal Engineer's deep understanding of military aviation, the leadership that he gave his officers and men, and to his meticulous planning and detailed operational training of his combat squadrons. An outstanding feature of these operations was close co-operation between the Air Force and the Army. This grew out of Air Marshal Engineer's cordial relations with the Army Commanders, his understanding of their plans and problems, and the unstinting support that he gave to them. This spirit of close co-operation infused both the Air Force and the Army in the field. Air Marshal Engineer rendered distinguished service in the operations against Pakistan along the Western border and contributed greatly to their success.

AIR MARSHAL HARI CHAND DEWAN, PVSM :

AIR MARSHAL Hari Chand Dewan, was the Air Officer Commanding-in-Chief of Eastern Air Command during the recent Indo-Pakistan war. His task in these operations was to neutralise the Pakistani Air Force in the East and to provide support to the Army in its operations for the liberation of Bangla Desh. Eastern Air Command carried out these tasks with the utmost efficiency. The fact that it was able to do so was due very largely to the meticulous planning of the operations by Air Marshal Dewan and his staff working in close co-ordination with the General Officer Commanding-in-Chief of the Army's Eastern Command. The flying units of Eastern Air Command employed during the war also demonstrated a very high level of training and combat capability. The fighter force was able to establish complete air superiority within the first two days. Thereafter, it gave accurate and plentiful support to the Army against heavily defended localities. All the helicopters in the Command were organised into a task force, which became a flying bridge, helping to transport nearly 4,000 troops and 40 tons of equipment over rivers and streams where the bridges had been destroyed by the retreating Pakistani Army. Again, Eastern Air Command was responsible for the paratroop of a battalion group in support of the army's rapid advance on Dacca. Through the multitude of tasks that it performed so successfully, Eastern Air Command played a very major part in mounting the hard-hitting and fast-moving campaign which resulted in the speedy liberation of Bangla Desh. Air Marshal Dewan's personal drive, determination and leadership contributed greatly to the success of the operations against Pakistan.

MAJOR GENERAL INDERJIT SINGH GILL, PVSM, MC:

MAJOR GEN. Inderjit Singh Gill took over the appointment of Officiating Director of Military Operations at Army Headquarters in August, 1971 when the previous incumbent was posted out on promotion. He was, immediately faced with the gigantic task of operational planning and provision of all forms of assistance to JACKPOT. Simultaneously, he was required to formulate operational plans involving almost the entire field force and including the planning for various new raisings and large scale troop movements. All this work required thorough understanding and assimilation of all available intelligence, a clear understanding of Pakistan's aims and capabilities and detailed knowledge of the widely varying terrain conditions in both the Eastern and Western Sectors. In addition, from the very outset, he was required to deal with the day to day developments in Bangla Desh and their operational implications. Maj. General Gill displayed remarkable energy, imagination, professional competence and capacity for work in dealing with all these functions. In all his planning, prior to operations, he showed a great deal of foresight and very sound judgement. This General Officer bore the main burden of dealing with the day to day conduct of military operations. In the planning and conduct of all operations, he was able to ensure effective and most valuable co-operation and co-ordination with the Navy and the Air Force. Throughout this period, he displayed professional knowledge, great balance and tremendous energy, he worked round the clock, had complete control over operations in both the Sectors and was constantly thinking ahead. Maj. Gen. Gill displayed exceptionally high devotion to duty, professional ability and zeal. He rendered highly commendable service to the nation.

SHRI KHUSRO FRAMURZ RUSTAMJI, INSPECTOR GENERAL OF POLICE MADHYA PRADESH

After a brilliant academic career, **Shri Khusro Framurz Rustamji** (55 years), joined the Indian Police in 1938. Having acquitted himself very well in various assignments in the State, he became a DIG in the Hyderabad State on 18th March 1949. In view of his meritorious record, he was appointed Deputy Director, in the Intelligence Bureau, to be in-charge of Prime Minister's Security. In 1958, he went back to Madhya Pradesh as the Inspector General of Police, which post he held with distinction. When the Government of India decided that the policing of the Indo-Pack border should be centralised and entrusted to a well trained, well-knit para-military force, Shri Rustamji was selected and appointed as the Director General of this force in view of his excellent reputation as one of the finest Inspectors General of Police in the country. He plunged himself into the anti-infiltration work and the subsequent hostilities with Pakistan in September-October 1965. Soon after the hostilities, he applied his energies to organising the Border Security Force, building up its machinery, communication, transport, weaponry, and the setting up of training institutions. In the momentous months, after 25th of March 1971, when the Pakistani Army cracked down in East Bengal, a very delicate and sensitive responsibility was entrusted to the Border Security Force. After the war broke out on 3rd December, 1971, the Border Security Force, in modification of its original role, fought with

the army, shoulder to shoulder, and distinguished itself in the war against Pakistan. The credit for raising a Force from scratch and building it into a fine force capable of great fight, toughness, innovation and ability goes to Shri Rustamji. Endowed with a disarming smile, highly affable, dynamic in thinking, Shri Rustamji's leadership of the Border Security Force in those most crucial months contributed considerably to the success of India's war against Pakistan.

SHRI ASHWINI KUMAR, INSPECTOR GENERAL OF POLICE, PUNJAB

Shri Ashwini Kumar (51), holding the dual charge of Inspector General of Police, Punjab, and Inspector General, Border Security Force during the last few months, brought his wanted zeal, energy and enthusiasm to organising defences, arranging proper protection for vital installations and in general getting the Punjab State ready to face the impending Pakistani attack from across the border. The credit for the tough front put up by the border Security Force on the Punjab border went to Shri Ashwini Kumar, whose liaison with the top echelons of the Army, under whose operational control the Border Security Force worked, was close and effective. Besides constantly visiting the borders and infusing confidence and fighting spirit into his men, Shri Ashwini Kumar provided a fund of information on the intelligence side and a considerable share of the credit for the failure of the pre-emptive strike of the Pak Air Force on Indian Air bases on 3rd December 1971, should go to the intelligence conveyed by him.

SHRI SURINDER SINGH BEDI, COMMISSIONER, JULLUNDER DIVISION

Shri Surinder Singh Bedi (54), Commissioner for Jullunder Division, was appointed as the Liaison Officer to Western Command from the State of Punjab. It was largely due to the energetic and vigorous help given by him that the movement of troops and occupation of areas by them for defence purposes were accomplished smoothly and without creating any ill-will or dislocation of the civil population. He visited every part of the front before and during the operations to create confidence among the public and ensured that there was no panic in the forward areas. It was also largely due to his efforts that the administration functioned so smoothly in the forward areas that no evacuation took place even when, in places like Fazilka, the battle came very close to the town. The relations that he established between the Army and the civil population were such that it created a sense of confidence and trust, with the result that there was nothing that was required by the Army that was not provided within a very short time. He also rendered yeoman's service in organising the civil defence and ensuring that infiltration could be immediately detected.

SHRI SIRTAJ SINGH SAHI, CHIEF ENGINEER, DRAINAGE, PUNJAB

Shri S. S. Sahi (52), Chief Engineer, Drainage, Punjab, served the cause of the nation during the recent conflict at the Western Borders by selfless and untiring devotion to duty. He organised at top speed and executed thorough mobilisation of men and machinery in the State as also in the adjoining States for digging urgently a number of defence drains along the international border to meet the defence requirements, which helped considerably to thwart the enemy action and safeguard the borders.

WITH OUR

WARMEST GREETING

TO

**OUR GALLANT ARMED FORCES
DEFENDERS OF OUR NATIONAL
FREEDOM, HONOUR AND INTEGRITY.**

●

NATIONAL TORCH AND TUBE

**DEVCHAN NAGAR., MALAD (EAST)
BOMBAY-64**

MANUFACTURERS OF

**ALUMINIUM ROUND AND RIGID
CONTAINERS FOR
RADIO, TELEPHONE AND
LIGHTING INDUSTRY**

●

PHONE : 693269

GRAMS :- "MINCAN"

PARAM VIR CHAKRA (ARMY)**MAJOR HOSHIAR SINGH (IC-14608), 3 GRENADIERS :**

ON the 15th December 1971, 3 Grenadiers were given the task of establishing a bridge-head across the Basantar River in the Shakargarh Sector of the Western Front. Major Hoshiar Singh was commanding the left forward company and was ordered to capture the enemy locality at Jarpal. This was a well fortified position and was held in strength by the enemy. During the assault his company came under intense shelling and effective cross fire from enemy medium machine guns. Undeterred and with complete disregard for his own safety, he personally led the charge, inspiring his men, and captured the objective after a fierce hand to hand fighting. The enemy reacted strongly and put in three counter attacks on the 16th December 1971; two of them supported by armour. Maj. Hoshiar Singh, unmindful of the heavy shelling and tank fire, went from trench to trench, motivating his command and encouraging them to stand fast, and fight. Inspired by cool courage and dauntless leadership, his company repulsed all the attacks inflicting heavy casualties on the enemy. On the 17th December 1971, the enemy put in another determined attack, with a battalion supported by heavy artillery fire. Though seriously wounded by enemy shelling, Major Hoshiar Singh again went from trench to trench, moving about in the open, with utter disregard to his personal safety, encouraging his men to stick to their ground. At this time an enemy shell landed near the Medium Gun post, injuring the crew and rendering it inoperative. Realising the importance of the Machine Gun fire, Major Hoshiar Singh immediately rushed to the Machine Gun pit and, though seriously wounded, himself manned the gun, inflicting heavy casualties on the enemy. The attack was successfully repulsed and the enemy retreated, leaving behind 85 dead, including their Commanding Officer and three other officers. Unmindful of his serious wounds, with utmost devotion to duty, this gallant officer refused to be evacuated and stayed on with his company till the cease-fire, when he was evacuated by order. Throughout this operation, Major Hoshiar Singh displayed, most conspicuous gallantry in the face of the enemy, grim determination and indomitable fighting spirit. His dogged resistance, complete disregard to his personal safety and cool courage so inspired his command that they performed outstanding acts of gallantry and defeated repeated enemy attempts to recapture the locality. The steadfastness, dauntless courage and indefatigable will displayed by Major Hoshiar Singh were in keeping with the highest traditions of the Indian Army. His refusal to be evacuated, despite his serious wounds, was an act beyond the call of duty.

2/LT ARUN KHETARPAL (IC-25067), 17 HORSE (POSTHUMOUS)

ON the 16th December 1971, The Poona Horse (17 Horse) joined the battle with the 8th Armoured Brigade of the Pakistani forces, for the battle of Basantar in the Shakargarh Sector on the Western Front. The pivotal position at Jarpal was held by two troops of 'B' Squadron under Major Bahl, with 3 Grenadiers. This position was subjected to a determined attack by one Pakistani

armoured regiment. Being heavily outnumbered and coming under increasing pressure, the Squadron Commander asked for reinforcements. 2/Lt. Khetarpal, who had heard this transmission over the radio and was located nearest to 'B' Squadron, answered the call and placing himself at the head of his troops moved off at full speed to meet the enemy attack. On the way to the 'B' Squadron location, his troops came under fire from enemy strong points and recoilless gun nests that were still holding out in the bridgehead established across the Basantar river by own troops. Realising that a critical situation was developing on the 'B' Squadron front, and that, time was at a premium, this gallant young officer, assaulted the enemy strong points, physically over-running them and capturing the enemy's infantry and weapon crews at pistol point. In the course of this action, the Commander of the only other tank left in his troop was also killed. But 2/Lt. Khetarpal continued to attack relentlessly till all opposition was overcome and he broke through towards the 'B' Squadron location just in time. When the enemy tanks started pulling back, after their initial probing attacks on 'B' Squadron, he chased them and destroyed one of them, before he was ordered to fall back in line with other tanks of 'B' Squadron. Soon, the enemy reformed and launched another attack with an armoured squadron, against the sector held by three of our tanks under **Captain V. Malhotra**, of which one was manned by 2/Lt. Khetarpal. A fierce tank battle ensued. Ten enemy tanks were hit and destroyed. 2/Lt. Khetarpal personally destroyed four. However, by now a critical situation had developed: one of our tanks was hit and the gun of Captain Malhotra's tank became inoperative due to a mechanical failure. Just then, 2/Lt. Khetarpal's tank was also hit and burst into flames and the officer himself was severely wounded. Captain Malhotra ordered 2/Lt. Khetarpal to abandon his tank. But 2/Lt. Khetarpal realised that, though seriously mauled, the enemy was still pressing their attack in this Sector, and that, if he abandoned his tank, there was nothing to stop the enemy from breaking through. Though his own tank was burning furiously, and he himself was grievously wounded, this gallant young officer continued engaging the enemy tanks and destroyed one, barely a hundred meters from his position. At this stage, his tank received a second hit, resulting in his death. 2/Lt. Arun Khetarpal was killed, but by supreme devotion to duty, by his outstanding valour, he had saved the day; the enemy was denied the breakthrough, he was seeking so desperately. 2/Lt. Arun Khetarpal displayed most conspicuous gallantry in the face of the enemy, indomitable fighting spirit and tenacity of purpose. His calculated and deliberate decision to fight from his burning tank was an act of valour and self sacrifice, far beyond the call of duty.

4239746 L/NK ALBERT EKKA, 14 GUARDS (POSTHUMOUS):

LANCE NAIK Albert Ekka was part of the left forward company of 14 Guards during their attack on the enemy defence at Gangasagar on the Eastern Front. This was a well fortified position held in strength and in great depth, by the enemy. The assaulting troops were subjected to intense shelling and heavy small arms fire, but they charged on to the objective and were locked in bitter hand to hand combat. Lance Naik Albert Ekka, noticed an enemy light machine gun inflicting heavy casualties on his Company. With complete disregard to his personal safety, he charged the enemy bunker, bayoneted two enemy soldiers and silenced the light machine gun. Though seriously wounded in this

encounter, he continued to fight alongside his comrades through the mile deep objective, clearing bunker after bunker with undaunted courage. Towards the northern end of the objective, one enemy Medium Machine Gun opened up from the second storey of a well fortified building, inflicting heavy casualties and holding up the attack. Once again, this gallant soldier, without a thought to his personal safety, despite his serious injury and the heavy volume of enemy fire, crawled forward, till he reached the building and lobbed a grenade through the loophole of the bunker killing one enemy and injuring the other. The Medium Machine Gun, however, continued to fire. With outstanding courage and grim determination, Lance Naik Albert Ekka scaled a side wall and entering the bunker bayonnetted the enemy who was still firing. He silenced the Machine Gun, saving further casualties to his company and ensured the success of the attack. In this process, however, he received serious injuries and succumbed to them after the capture of the objective. During this action, this gallant Non-Commissioned Officer, repeatedly displayed the most conspicuous valour, outstanding determination, endurance and fighting aspirit in the face of the enemy. His continued acts of gallantry and supreme sacrifice were beyond the call of duty and in the best traditions of the Services.

FLYING OFFICER NIRMAL JIT SINGH SEKHON (10877), (POSTHUMOUS)

FLYING OFFICER Nirmal Jit Singh Sekhon was a pilot of a Gnat detachment based at Srinagar for the air defence of the valley against Pakistani air attacks. In accordance with the international agreement dating back to 1948, no air defence aircraft were based at Sirinagar, until the outbreak of hostilities with Pakistan. Flying Officer Sekhon was, therefore, unfamiliar with the terrain and was not acclimatised to the altitude of Srinagar, especially with the bitter cold and biting winds of the Kashmir winter. Nevertheless, from the onset of the war, he and his colleagues fought successive waves of intruding Pakistani aircraft with valour and determination, maintaining the high reputation of the Gnat aircraft. On 14th December 1971, Srinagar Airfield was attacked by a wave of six enemy Sabre aircraft. Flying Officer Sekhon was on readiness duty at the time. However, he could not take off at once because of the clouds of dust raised by another aircraft which had just taken off. By the time the runway was fit for take-off, no fewer than six enemy aircraft were overhead, and strafing of the airfield was in progress. Nevertheless, inspite of the mortal danger of attempting to take off during an attack, and inspite of the odds against him, Flying Officer Sekhon took off and immediately engaged a pair of the attacking Sabres. In the fight that followed, at tree top height, he all but held his own, but was eventually overcome by sheer weight of numbers. His aircraft crashed and he was killed. In thus, sacrificing himself for the defence of Srinagar, Flying Officer Sekhon achieved his object, for the enemy aircraft fled from the scene of the battle without pressing home their attack against the town and the airfield. The sublime heroism, supreme gallantry, flying skill and determination, above and beyond th call of duty, displayed by Flying Officer Sekhon in the face of certain death, set new heights to Air Force traditions.

Strongest of words in the stock of our vocabulary feel feeble to express even most inadequately the feelings of gratefulness and gratitude for our gallant armed forces who waged and won the historic and epoch-making war for the liberation of Bangla Desh.

Our hearts particularly go for those who have laid down their lives and whose gallantry of the most exceptional order has been recognised by the government and people of our land.

We pledge to serve those who have served the cause of peoples' freedom, honour and integrity "the best"

DOSSA HARJEE

257-259, YUSUF MEHARALI ROAD,
(Old Masjid Bunder Road),
P. O. BOX No. 3209, BOMBAY-3 (BR).

HOUSE OF QUALITY TARPAULINS

LOOK OUT FOR THESE NAMES

■ **FILTER CLOTH** ■

COTTON—TERENE—NYLON—POLYTHENE

■ **CANVAS** ■

COTTON—JUTE—FLEX—GREY—DYED—WATERPROOF

■ **LINOLEUM & JUTE CARPET** ■
THE VERSATILE FLOOR-COVERINGS

■ **EYELETS** ■

RUBBER SHEETING, TWINE, ETC.

MAHA VIR CHAKRA (ARMY)

2/LT SHAMSHER SINGH SAMRA (SS-22826), 8 GUARDS, (POSTHUMOUS):

THIS young officer displayed most conspicuous bravery, courage, determination and conduct of an outstanding nature beyond the call of duty in close combat with the enemy; he made the supreme sacrifice. During an attack on Murapara, when only 25 yards from the enemy position, he was hit by a machine gun burst in the chest. Undererred, he charged and destroyed the bunker with a grenade. He then rushed to a second bunker. Hit by another burst he died with the grenade in his hand. His action ensured success on the objective

JC-39148 SUB. MALKIAT SINGH, 14 PUNJAB, (POSTHUMOUS):

HE displayed most conspicuous bravery in the presence of the enemy and outstanding devotion to duty. His Battalion was holding an important defensive position in the Jessore Sector when this position was attacked by enemy Infantry and Armour. He moved from trench to trench encouraging his men. The enemy came within 50 yards and subjected his position to effective LMG fire and grenades. He crawled forward to engage the enemy and, even though wounded, he killed two machine gunners before he was hit by an enemy tank and killed

13657079 L. NK RAM UGRAH PANDEY, 8 GUARDS, (POSTHUMOUS) :

HE showed exemplary valour, leadership and personal example in the face of the enemy. During an attack on Murapara when his Company was held up by heavy and accurate fire, he crawled up and destroyed in succession two enemy bunkers with hand grenades. He then took up a rocket launcher and destroyed a third bunker where he was mortally wounded and died on the spot.

5037008 RFN. PATI RAM GURUNG, 5/1 GR, (POSTHUMOUS) :

FOR spontaneous act of outstanding bravery in total disregard to personal safety and unhesitating response to the call of duty. During an attack on Uthali in Kushtia District, the attack was arrested by intense and accurate heavy machine gun fire from a bunker. Rifleman Pati Ram Gurung immediately rushed forward and single handed charged the machine gun, firing his machine gun from the hip. As he rushed forward, he was hit by a burst from the machine gun. Though mortally wounded, he continued the charge; silenced the machine gun before he fell down dead.

LT. COL. H. H. S. BHAWANI SINGH (IC-9015), 10 PARA :—

FOR exemplary courage, qualities of leadership and gallantry of the highest order in the face of the enemy. He personally led his men deep into Pakistani territory and successfully raided enemy held posts at Chachro and Virawah. He displayed aggressive spirit, went without sleep or rest for four days and nights in difficult terrain, under heavy enemy small arms fire and captured seventeen prisoners with arms and ammunition. His action helped occupation of large area of enemy territory by own troops and created panic among the enemy.

MAJOR DALJIT SINGH NARANG, (IC-8140), 45 CAV, (POSTHUMOUS) :

FOR conspicuous bravery of a very high order in the face of the enemy. Commanding a squadron of 45 Cavalry, grouped with a Infantry Battalion, **Major Daljit Singh** was assigned the task of containing enemy incursions into Indian territory in the Jessore Sector. When attacked by enemy Infantry and Armour, he skillfully and boldly manoeuvred his squadron and directed the fire effectively, standing on the turret of his tank, despite heavy enemy fire. His daring, courage and disregard to personal safety, inspired his troops and resulted in heavy losses to the enemy. During this action, while leading his squadron, he was hit by MMG fire and was killed.

5439887 RFN. DIL BAHADUR CHETTRI, 4/5 GR :

FOR most conspicuous gallantry in the face of the enemy and outstanding devotion to duty. During the attack on Atgram, **Rfn. Dil Bahadur Chettri**, showed total disregard to personal safety and fearlessly fought, charging from bunker to bunker, killing eight enemy troops with his kukri and physically capturing a Medium Machine Gun, which was holding up his Company's assault. His determination and cool courage in close combat with the enemy were a source of great inspiration to all ranks in his company.

BRIG. JOGINDER SINGH GHARAYA (IC-1984), KC, VSM :

As Brigade Commander, **Brig. Joginder Singh** planned operation with great professional skill and launched his Brigade into operations with commendable swiftness in the Jessore Sector. His Brigade was attacked on four successive occasions. However, his troops stood the ground, despite heavy casualties, due largely to his excellent tactical handling, outstanding courage, constant presence and guidance. His conduct of this operation was directly responsible for heavy losses to the enemy and subsequent disorganised withdrawal. During the subsequent offensive operations, **Brig. Gharaya** was with the leading troops. When he was severely wounded by enemy fire. He refused to be evacuated till he had seen the attack through. Success of this attack was vital to our further advance in Bangla Desh. **Brig. Gharaya** conducted himself with extraordinary courage in the face of the enemy, and through his personal example, enthused such courage and confidence in his troops, as made complete success of the difficult operations.

LT. COL. PREM KUMAR KHANNA (IC-7380), 5 SIKH :

FOR outstanding leadership and courage of a high order in the face of the enemy. During the battle of Chhamb, **Lt. Col. Kumar's** Battalion was subjected to continuous and ceaseless attacks in overwhelming strength by enemy Infantry and Armour. He handled his Battalion with cool and clam courage. He acted with skill, imagination and aggressive spirit to restore situations. His fearless and courageous conduct, with complete disregard to personal safety, was of the highest order.

MAJOR ANUP SINGH GAHLAUT (IC-13792), 3 DOGRA, (POSTHUMOUS):

FOR extreme cool courage, single-minded determination, persistent aggressive action and exemplary leadership. Given the task of establishing a block in the Laksham Sector, **Major Anup Singh Gahlaut** successfully inflicted

heavy casualties on the enemy. Subsequently, he volunteered to go to the assistance of 'D' Company of his Battalion who were under heavy enemy pressure. In this mission, he pinned down an enemy company, but came under attack from another direction. Although wounded, he continued to fight and succeeded in breaking the enemy attack. He expired shortly after this heroic battle, having been mortally wounded in hand to hand fighting.

MAJOR BASIDEV SINGH MANKOTIA (IC-14221), 9 PUNJAB :

HE displayed conspicuous gallantry, tenacity and devotion to duty of the highest order in the face of the enemy. As Commander of the screen position at Ranian, Major Basidev Singh Mankotia repulsed four enemy attacks in greatly superior strength, with heavy casualties to the enemy. When a portion of his screen was over-run, he personally led a counter-attack and regained the lost ground. Even though wounded in the shoulder, he refused to be evacuated in view of the importance of this screen to us. By personal example of courage and disregard to personal safety, he inspired the men under his command to perform acts of commendable gallantry.

SUB. MOHINDER SINGH (JC 33029), 18 PUNJAB :

FOR indomitable courage in the face of the enemy, tenacity, inspiring leadership and conspicuous gallantry. During an attack in the Kargil Sector when the attack was being held up by enemy Medium Machine Guns, Sub. Mohinder Singh inspired and exhorted his men by personal example to maintain momentum of the attack. He charged forward, destroyed one of the Medium Machine Gun bunkers and inflicted casualties on the enemy in close combat. His personal example and gallantry ensured success of the attack.

SEP PANDURANG SALUNKHE (2760401), 15 MARTHA II, (POSTHUMOUS) :

FOR outstanding gallantry, indomitable courage, devotion to duty, guts and determination of a very high order. During an assault by our troops, an enemy rocket launcher posed a threat to the tanks assaulting with the Infantry. Sensing the danger to our tanks, this gallant young soldier, at grave risk to his life, charged towards the rocket launcher, jumped on the enemy and physically snatched away the rocket launcher, even though he received burst of Sten Gun fire at point blank range; he silenced the rocket launcher and made the supreme sacrifice.

BRIG. ANANT VISHWANATH NATU (IC-4703), 9 GR :

FOR displaying inspiring leadership, indomitable courage in the face of the enemy and professional skill of a high order. As Brigade Commander in the Poonch Sector, Brig. Anant Vishwanath Natu planned and organised his defences so skillfully that, when the enemy attacked these defences in overwhelming strength, supported by great weight of Artillery fire, not a single post was lost in spite of repeated attacks over a period of four days. Throughout this battle, Brig. Natu showed cool courage, provided inspiring leadership and ensured that his troops held their ground in this vital sector.

LT. COL. RAJKUMAR SINGH (IC-7113), 14 PUNJAB :

FOR outstanding leadership, bravery and cool courage. Given the task of occupying a key position in the Jessor Sector, Lt. Col. Rajkumar Singh organised

it with great professional skill and held on to it with utmost tenacity. When the enemy attacked with Infantry and Armour, he went round from Company to Company, inspiring his troops and exhorting them to destroy the enemy and hold their ground. He successfully repulsed three enemy attacks and inflicted heavy casualties.

MAJOR JAIVIR SINGH (IC-14509), 5 SIKH :

HE displayed exemplary courage, grim determination, gallant and inspiring leadership and devotion to duty of a very high order. When the enemy attacked his Company position in the Chhamb Sector, in massive strength supported by well co-ordinated fire, this young Company Commander repeatedly exposed himself to the fire of small arms and Artillery. With complete disregard to personal safety, he repulsed a series of attacks with heavy losses to the enemy during the night. The next day, with his inspiring leadership, he held his ground against an attack by Infantry and Armour. Subsequently, he similarly beat back two more attacks when the enemy succeeded in penetrating his defences. Maj Jaivir Singh personally led a counter attack and cleared the incursion after hand to hand fight. Throughout this battle, this officer, not only kept his Command intact, but also aided in the recapture of a neighbouring post which had been overrun by the enemy.

MAJOR KULDIP SINGH CHANDPURI (IC-18076), 23 PUNJAB:

MAJOR Kuldip Singh Chandpuri displayed conspicuous bravery, tenacity and devotion to duty of the highest order. Against successive enemy tank attacks, he held his ground at Longawala by his personal courage, inspiring example and offensive spirit, until reinforcements arrived. He inflicted heavy casualties and forced the enemy to retreat, leaving behind 12 tanks.

MAJOR CHEWANG RINCHEN, MVC (IC-16224), LADAKH SCOUTS, (BAR TO MAHA VIR CHAKRA):

FOR exemplary courage, initiative, leadership and devotion to duty of a high order. Major Chewang Rinchen, was in command of a Force detailed to capture a couple of posts across the Cease-Fire Line in the Paratapur Sector. Due to his professional skill, leadership and outstanding gallantry in the face of the enemy, his force captured nine enemy localities at high altitude and in difficult terrain.

BRIG. MOHINDER LAL WHIG (IC-3940), 5 GR:

HIS Brigade had been allotted the task of capturing the complex of enemy pickets overlooking Cargil. These pickets had been intensively fortified by the enemy who had laid mines and wire and had brought forward additional weapons, guns and ammunition. The average altitude was over 12000 feet with temperature falling to minus 20 degrees centigrade. The strongest picket dominating the whole of Kargil region being point 13620. Brig. Mohinder Lal Whig led his troops with outstanding tenacity with complete disregard to the rigours of altitude and temperature and succeeded in capturing 36 such posts within a period of ten days, killing at least 300 enemy personnel and capturing a number of weapons. Throughout these operations. Brig. Mohinder Lal Whig

remained in the forefront with his troops, displaying inspiring leadership, a high degree of personal courage in the face of the enemy, grim determination and devotion to duty.

LT. COL. HARISH CHANDRA PATHAK (IC-7114), 8 SIKH LI:

FOR showing inspiring leadership, unflinching determination, devotion to duty and outstanding courage in the face of the enemy. **Lt. Col. Harish Chandra Pathak** was allotted the task of capturing Pak Fatehpur post and the surrounding embankments, which were held by the enemy in strength. During the attack, the enemy engaged the assaulting troops with heavy and accurate Machine Gun fire and intense Artillery shelling, causing many casualties. In the initial stages, the enemy seemed to have succeeded in breaking up the assault, but with rare personal courage and outstanding leadership, Lt. Col. Pathak rallied and led his men; his personal example so inspired his troops that they were seen amidst the enemy and succeeded in capturing the objective. The enemy then launched two determined counter attacks which were beaten back inflicting heavy casualties on the enemy and capturing large quantities of arms and ammunition. The success of the Battalion against heavy odds was largely due to the indomitable courage and inspiring leadership, displayed by Lt. Col. Pathak.

LT. COL. KULWANT SINGH PANNU (IC-6213). 2 PARA:

THE battalion commanded by Lt. Col. Kulwant Singh Pannu was paraded on 11 December, 1971 in the area north of Tamgao' the Bamg'a Desh with the objective of cutting off the enemy's route of withdrawal and preventing their buildup at Tangail. Although the para-drop was much dispersed, the Battalion had to come into action immediately to clear the enemy occupying Poongli Bridge, north of Tangail during his southward withdrawal from My-mensingh. During this operation, Lt. Col. Kulwant Singh Pannu displayed outstanding leadership and conspicuous gallantry by moving from platoon to platoon amidst heavy Medium Machine Gun fire, directing them to right places to deal with the enemy. Lt. Col. Kulwant Singh Pannu displayed complete disregard for his personal safety. It was through his personal example, gallantry and skilful direction that his Battalion achieved remarkable success in its task and held on to their position against three successive enemy assaults, inflicting heavy casualties on the enemy and capturing a number of them.

MAJ. DHARAM VIR SINGH (IC-14123), 8 GRENADIERS :

FOR brilliant leadership, devotion to duty and conspicuous gallantry in the face of the enemy. During the attack on Chakra, a strongly defended and heavily fortified position, his troops came under accurate and intense Medium Machine Gun and Artillery fire when assaulting through the mine-field. His Company suffered many casualties. At this critical juncture, **Maj. Dharam Vir Singh** showed unflinching determination and outstanding courage by leading the assault unmindful of the dangers to personal safety and enthusing his men to press the attack home. After a bitter fight, he succeeded in securing his objective. Subsequently, the enemy counter attacked this position, but again Maj. Dharam Vir Singh's grit, determination and inspiring leadership held his Company together and the enemy was beaten back. His bravery, devotion to duty and inspiring leadership were in the highest traditions of the Indian Army.

Aluminium Rolling & Spinning Mills Private Limited,

BHAIDAS BHUTA ROAD, OFF NAGARDAS ROAD,
MOGRA (WEST), ANDHERI (EAST), BOMBAY - 69.

PHONE: 57 48 18

Manufacturers of
**Fan Brand Alluminium Utensils, especially Pech Barni,
Achar Barni, Milk can, Buckets, Kettles with
welded spouts, Dabas, Milk Cookers with
whistle, Military topes Parat, etc.**

**We are also making
industrial components by pressing and spinning.**

We are in the business of SATISFACTION:
We give IT to our customers by precision, quality and an excellent
after sales service. And of course, we get IT because they are satisfied.

OUR PRODUCTS ARE

1. **INSTRUMENT FITTINGS**
Tees, Unions Connectors, Elbows
Bulkhead Unions, Nipples, Crosses,
etc. In Compression, PVC or Flare
types made from brass Stainless
or Mild Steel

2. **STAINLESS STEEL VALVES**
Needle, Globe Ball, Non-return
and Relief Valves, Drain Cocks
Gauge Glass Cocks,
In 304 or 316

**Quick Acting Couplings, Barrel Pumps, and Cocks, Perforated
Cable Trays, Orifice Plates and Stainless Steel Coils and Precision Tools**

Our customers like NOCIL, AIR-INDIA, Mazagon Dock Limited, Herdillia
Chemical Ltd., Humphreys & Glasgow (O) Limited, Fertilizer Corporation
of India Limited, F. A. C. T., F. E. D. O., I. C. I. India Limited.
and Carbide Chemicals Company are satisfied with our products.

Would you like to try any of our products? then.

PLEASE CONTACT US:

AT

**ASSOCIATED COMMERCIAL & MANUFACTURING
ENTERPRISE PRIVATE LIMITED**

Janmabhoomi Chambers, 29 Walchand Hirachand Marg, Bombay-1.

Telephone:
26 28 91
26 13 91

Telegram:
ACMBLIM

BRIG. KRISHNA SWAMI GOWRI SHANKAR (IC-3999), SIGNALS :

BRIG. Krishna Swami Gowri Shankar's Brigade was allotted the task of capturing a well-prepared and heavily fortified enemy position in the Dera Baba Nanak Sector. Brig. Krishna Swami Gowri Shankar showed audacity, boldness and originality in the planning of the attack. During the attack, he was in the forefront, directing operations and exercising personal control, undeterred by heavy enemy tank, medium machine gun and artillery fire. By his presence with the forward troops, he made immediate modifications to ensure speed and maintain momentum of the attack. He displayed outstanding leadership, personal bravery, great determination and utter disregard to personal safety. His skill and inspiring presence ensured success of this attack with heavy losses to the enemy.

LT. COL. KASHMIRI LAL RATAN (IC-7661), 6 SIKH :

FOR inspiring leadership, personal courage of a high order in the face of the enemy and great determination. **Col. Kashmiri Lal's** Battalion was assigned the task of holding ground of tactical importance in the Poonch Sector. He organised the defence with great professional skill. When his Battalion area was subjected to fierce enemy attacks, he moved from Company to Company, with total disregard to his personal safety, inspiring his men to hold their ground and beat back the enemy. His determination, courage and leadership were directly responsible for repulsing enemy attacks and inflicting heavy casualties to the enemy.

LT. COL. RATTAN NATH SHARMA (IC-5270), 21 PUNJAB :

LT. COL. Rattan Nath Sharma showed outstanding courage, initiative and leadership of a high order in his Battalion's attack on an important feature, the capture of which was considered vital. During the fierce fighting in the course of this attack, he set a personal example. Undeterred by heavy enemy fire, he was in the forefront and led his men to victory by exemplary courage and leadership.

LT. COL. SURRINDER KAPUR (IC-7684), 1 JAK RIFLES :

LT. COL. Surrinder Kapur's Battalion was given the task of taking up a defensive position in the Jessore Sector to blunt any enemy attack and inflict maximum casualties on him. He displayed great professional skill and leadership in deploying his Battalion with skill and speed, inspite of being under enemy small arms and Artillery fire. The enemy attacked this position five times in three days, but the Battalion beat back each attack with heavy losses to the enemy. During this period Lt. Col. Surrinder Kapur displayed aggressive spirit, indomitable courage, inspiring leadership and tenacity.

CAP. PRADIP KUMAR GOUR (IC-16177), 660 AOP SQN, ARTILLERY: POSTHUMOUS :

FOR displaying extraordinary devotion to duty, outstanding courage and tenacity of purpose. **Captain Pradeep Kumar Gour** flew round the clock mission deep inside the enemy territory for directing Artillery fire and obtaining vital information about the enemy, undeterred by heavy small arms and

Artillery air burst fire and in total disregard to his personal safety. When flying one of such missions for directing Artillery fire for an attack by own troops in the Western Sector, he was spotted by three enemy Sabres. Capt. Gour saw these aircraft. In spite of the grave danger posed to him, he decided to remain in the area to complete his mission in view of its vital nature. This gallant officer carried on with his mission, evading the Sabres attacking him. Unfortunately, he was eventually shot down by them. He made the supreme sacrifice.

LT. COL. CHITOOR VENUGOPAL (IC-5096), 5/1 GR :

FOR personal courage in face of the enemy, outstanding devotion to duty, tenacity and exemplary leadership. During the operations in Bangla Desh, Lt. Col. Chitoor Venugopal was Officer Commanding, 5/1 Gorkha Rifles, in the Jessore Sector. His Battalion distinguished itself in the battles of Uthali and Darsana in hand fought actions against well prepared defensive positions. It subsequently played a decisive role in the lightening approach to and capture of Jhenida. During all these offensive operations, Lt. Col. Chitoor Venugopal showed, both speed and professional skill in planning the operations. He thus set a fine personal example by leading his troops in the attacks and maintaining the momentum against determined opposition. His leadership, gallantry and personal example inspired his Battalion to achieve decisive success, consistently in those battles and contributed in considerable measure to the overall success of our operations in the Jessore Sector.

MAJOR VIJAY RATTAN CHOWDHARY (IC-11094), 9 ENGINEER REGIMENT (POSTHUMOUS) :

FOR conspicuous bravery and exemplary courage shown in the face of the enemy. On the night of 11/12 December, 1971, when movement forward of our armour and consequently the momentum of our attack was held up on an extensive enemy minefield at Chakra. Maj. Vijay Rattan Chowdhary undertook to clear, in the face of intense enemy fire, a safe lane in the mine-field. Realising that the efforts of the Engineer party were being seriously hampered by accurate and intense enemy fire, Maj. Chowdhary, displaying utter disregard for his personal safety, moved from man to man, giving instructions and lending a hand, till the lane was cleared and movement of armour restored. During the entire advance from 5 December, 1971 onwards, Maj. Chaudhary was responsible for clearing four major mine fields, in addition to the one at Chakra. On all these occasions, he showed exemplary personal courage, initiative determination, a deep sense of devotion to duty and utter disregard to personal safety. While directing and supervising operations on a mine field lane at Basantar River, he was killed as a result of enemy shelling.

2960050 L/NK DRIG PAL SINGH, 15 RAJPUT, (POSTHUMOUS):

FOR exemplary courage in the face of the enemy devotion to duty and complete disregard to personal safety. On the night of 13/14 December, 1971, L/Nk Drig Pal Singh was commanding a section of a Company which came under heavy Medium Machine Gun fire from two enemy bunkers, which were causing casualties to own troops and hindering re-organisation. Taking two men of his section with him, L/Nk Drig Pal Singh crawled 200 yards up to the first bunker and lobbed a grenade which silenced the Medium Machine Gun. After this, when he was

crawling to the next bunker, he received an MMG burst on his left shoulder. Unmindful of the injuries, he inched his way to the bunker and as he was about to lob a grenade into it, he received another burst on his chest and was killed. Nevertheless, as a result of his gallant, bold and aggressive action, the enemy withdrew from the bunker, leaving behind their Medium Machine Gun and a large quantity of ammunition. This young and gallant soldier was directly responsible for enabling his Company to secure their objective. The supreme sacrifice made by L/Nk Drig Pal Singh was in the finest traditions of the Indian Army.

13664546 L/NK NAR BAHADUR CHHETRI, 12 GUARDS:

FOR displaying exemplary courage, devotion to duty, determination and utter disregard to personal safety in the face of the enemy. During the massive Pakistani attack with Infantry and Armour in the Chhamb Sector, L/Nk Nar Bahadur Chhetri, was deployed at Chhamb crossing on the Manawar Tawi, with anti-tank guided missiles. His position was under direct observation of the attacking enemy. When the enemy tank attempted to cross the Manawar Tawi, this young gallant soldier stuck to his post. With utter disregard to his personal safety, he resolutely engaged the tanks and destroyed five of them. His courageous and outstanding feat blunted the enemy assault. In spite of being exposed, and under heavy enemy fire, he displayed courage and professional skill of a very high order. This singular action imposed caution on the enemy and delayed his crossing of the Manawar Tawi.

COL. UDAI SINGH (IC-4868), 8 GR

FOR outstanding courage, initiative, firm determination and inspiring leadership in the face of the enemy. Col. Uday Singh was in charge of a force, consisting of three companies of Ladakh Scouts, and a section each of Mortar and Medium Machine Gun, which had been assigned the task of capturing the area from Chalunka to Turtok, across the Cease-Fire Line. This involved movement on manpack and animal transport, mostly by night in sub-zero temperatures at an altitude up to 18000 ft. through unreconnoitered area. He completely outmanoeuvred the enemy, far superior in numbers causing heavy casualties and capturing a large number of prisoners and considerable arms and equipment, to very little loss to his own troops. Despite no line of communication, and without artillery support, he followed up the enemy and pressed home his attack against well-entrenched enemy positions till Turseck and a considerable area beyond was captured. During the operation, which lasted ten days, he displayed gallantry, outstanding leadership and professional skill of a very high order.

LT. COL. SUKHJIT SINGH (IC-6704), SCINDE HOURSE :

FOR outstanding bravery, inspiring leadership, dedication to duty and complete disregard of personal safety in the face of the enemy. On 10 December, 1971 14 Scinde Horse were deployed west of Nainakot, when the enemy tanks attacked their position under cover of intense medium artillery and heavy mortar fire. In utter disregard of his own safety, Lt. Col. Sukhjit Singh directed the fire of his tanks with utmost courage and skillful leadership. Although under heavy shelling and tank fire, he opened the cupola of his tank so that he could observe better.

The enemy attack was beaten off, destroying two enemy tanks, without any loss to own troops. On 11 December, 1971, Lt. Col. Sukhjit Singh personally commanded an out-flanking force and tried to surround enemy tanks. They came under heavy medium artillery and mortar fire and the enemy tanks opened up from prepared positions, remaining unruffled, he closed in with the enemy and succeeded in destroying eight more tanks and in capturing one officer, two JCOs and two ORs. This outstanding performance of the Regiment was largely due to the skill, exceptional leadership and personal example of bravery shown by Lt. Col. Sukhjit Singh.

BRIG. SANT SINGH, MVC (IC-5479), SIKH LI, (Bar to Maha Vir Chakra:)

FOR displaying inspiring leadership, valour and complete disregard of personal safety in the face of the enemy. Brig. Sant Singh, MVC, while commanding a Sector in the Eastern theatre achieved spectacular results with a mixed force having only one regular Battalion, advancing thirty eight miles almost on foot, to secure Mymensingh and Madhupur in eight days. During this advance, his force faced very stiff opposition from the enemy and cleared heavily defended positions at several places. Throughout these actions, Brig. Sant Singh personally led and directed the troops, exposing himself to enemy Medium Machine Gun fire and shelling. His personal gallantry, leadership, skillful handling of meagre resources, audacity, improvisation and maximum use of local resources were responsible for the successful and rapid advance against much stronger enemy in well prepared defensive positions. In these operations, Brig. Sant Singh set an outstanding example of bravery and dedication to duty in the highest traditions of the Army.

BRIG. HARDEV SINGH KLER, AVSM, (IC-493), SIGNALS :

FOR showing outstanding courage, inspiring leadership and complete disregard of personal safety in the face of the enemy. He led the advance from Kamalpur upto River Turag, which involved clearing of enemy opposition at Kamalpur, Bakshiganj, Jamalpur, Tengail, Mirzapur and the west bank of River Turag, in addition to several delaying actions by the enemy in between. During all these actions, Brig. Kler was personally present with the leading troops and directed the operations, with complete disregard for his life. His handling of the troops during the Jamalpur battle showed great professional skill. By personally going into the thick of the battle without care for his safety, he provided great inspiration to his troops who had laid siege behind enemy positions south of Jamalpur. Despite heavy casualties, he directed the operations so skillfully and courageously that all attempts by the enemy to break through were foiled. He inflicted heavy casualties on the enemy and captured 379 prisoners as well as large quantities of weapons and ammunition. This remarkable success of operations was due to Brig. Kler's cool courage and outstanding leadership.

**BRIG. ANTHONY HAROLD EDWARD MICHIGAN, (IC-4190),
GRENADIERS :**

DURING the operations in Kustia District, Brig. Anthony Harold Edward Michigan displayed extraordinary professional ability, inspiring leadership, outstanding courage and complete disregard of personal safety. On December 3, 1971, he was given the task of capturing strongly fortified and heavily

defended enemy positions at Uthali and Darsana. In the attack on Uthali, when his troops ran into trouble and were surrounded by enemy automatic and tank fire from three sides, he took personal control of the situation under a withering hail of enemy fire, stabilised the battle and put his troops in a position from where the offensive could be resumed. He conducted the battle with cool courage and utter disregard of his life. He so inspired his troops that they took the objective by storm. The same day, he re-integrated his force for capturing the strongly fortified defences of Darsana, and after personally reconnoitering the area in the face of small arms and Artillery fire, carried out a preliminary operation breaking through the outer crust of enemy defences. He launched the main offensive the next morning and by sheer offensive spirit and motivation of troops, mounted a crushing attack on well prepared defensive positions through an extensive mine-field. He was again in the thick of the battle and, with personal example, inspired his troops, who broke through a devastating hail of Machine Gun, Artillery and Mortar fire and gained a decisive victory. After the capture of Darsana, he advanced towards Jhenida and, covering over 50 kilometres in 48 hours, he captured Jhenida. The enemy was taken completely by surprise and due to the speed of the advance several bridges were taken intact. During these actions Brig. Michigan commanded his Brigade with dash, professional skill, a high sense of duty and displayed courage and leadership of a very high order in the face of the enemy.

LT. COL. VED PRAKASH GHAI (IC-7119), 16 MADRAS, (POSTHUMOUS) :

FOR displaying outstanding gallantry, fearless courage and great devotion to duty with utter disregard to his personal safety in the face of the enemy. During the battle of Basantar in the Western Sector, having crossed the River and the mine obstacles in the face of heavy enemy opposition, Lt. Col. Ghai's battalion was occupying the bridge-head when the enemy mounted fierce counter-attacks. Lt. Col. Ghai rallied his men and beat off repeated enemy attacks during the night. As the day dawned, the enemy again mounted a counter-attack supported by tanks. Having been under constant heavy shelling during the night, the Battalion had not been completely re-organised. But, as soon as the main direction of the enemy attack crystallised, Lt. Col. Ghai moved to the Company localities with utter disregard to his personal safety. He moved fearlessly from one position to another, directing, encouraging and enthusing his men. Inspired by his personal example, bravery and leadership, the Battalion, supported by own tanks, repulsed the counter attacks with heavy losses to the enemy. When, after stabilising the situation, Lt. Col. Ghai was returning to his Headquarters, he was seriously wounded by an enemy shell, but he continued to direct the battle, neither caring for medical attention nor for personal safety. He died of his wounds on the battle field. He made a supreme sacrifice.

CAPT. SHANKAR SHANKHAPAN WALKAR (IC-23473), 18 MADRAS, POSTHUMOUS) :

For displaying conspicuous gallantry inspiring leadership and exemplary devotion to duty. Capt. Walkar was the Mortar Officer of his unit. On 16, December, 1971, when the Battalion reached Hingero Par (Pakistan), after a march of 42 miles, it came under very heavy shelling from enemy positions. With utter disregard to his personal safety, Capt. Walkar, went to each rifle company position to tie up defensive fire tasks. In doing so, he was hit twice

LATHIA RUBBER MFG. CO. P. LTD.

SAKINAKA, KURLA-ANDHERI ROAD, BOMBAY-72.

Telephone: { 551925
551926
Telex: 011-2430.

Grams: UCANRELY.

Manufacturers of :

- ▼ Rubber/Ebonite Rollers, complete with shell as well as recoating on old shells, for Textile, Paper, Rayon, Cement and Asbestos Industries.
- ▼ Rubber Blankets for Cluett Approved and Controlled Compressive Shrinking Range.
- ▼ Rubber Lining of Tanks, Vessels and Pipes-Complete fabrication and rubberlining. Mercury Cells fabrication and rubberlining for the first time in India.
- ▼ Industrial Moulded Rubber Articles.
- ▼ Evaset Rubber Sleeves for Evaset Shrinking Range.

Another name for

**TWO SOLID DECADES OF DEVOTED SERVICE TO
NATION'S TRADE AND INDUSTRY.**
under full technical supervision

OUR

*CONGRATULATIONS TO THE INDIAN ARMED FORCES
FOR THE GALLANT VICTORY !*

Furnace & Foundry Equipment Co.

SAKI NAKA P. O.
BOMBAY-72 AS

MANUFACTURERS OF:

**E.O.T. CRANES ★ INDUSTRIAL FURNACES ★
FOUNDRY EQUIPMENT ★ GEAR COUPLINGS
★ AIR BLOWERS**

by splinters and sustained injuries, but he refused to be evacuated and carried on with his task, displaying outstanding courage and devotion to duty. Heavy enemy shelling continued during the night, and early next morning, the enemy assaulted two Company positions. Although wounded, Capt. Walkar stuck to his job and brought very accurate mortar fire on the enemy and inflicted heavy casualties. At about 0800 hours, the mortar ammunition had almost finished. The mortar position became exposed to the enemy and was attacked. Capt. Walkar inspired his men to hold fast. He himself shot at least four enemy personnel and forced the enemy to pull back. He was, however, fatally wounded in this action. After firing the last round, he succumbed to the injuries. He fought bravely and laid down his life heroically in the best traditions of the Services.

5032571 HAV. BIR BAHADUR PUN, 5/1 GR

FOR displaying supreme devotion to duty, conspicuous bravery and complete disregard to personal safety in the face of the enemy. During the attack for the capture of Darsana on 4, December 1971, **Hav. Bir Bahadur Pun**, was with an advance Company attacking village Chandpur, east of Darsana. The objective consisted of highly developed and fortified bunkers, reinforced with Heavy Machine Gun, Medium Machine Gun and Recoilless Guns. Extensive anti-tank and anti-personnel mine-fields covered all approaches. When moving towards the objective, the Company came under heavy fire from the entire enemy frontage. Assisted by own artillery, mortar and tank fire, the assaulting Company continued to press the attack, but suffered heavy casualties. **Hav. Bir Bahadur Pun** moved ahead of his Platoon, inspiring and motivating his men to advance to the objective. On seeing the Heavy Machine Gun post of the enemy, which was responsible for causing the most casualties amongst his men, he rushed towards it through a nallah, crawled about 100 yards, closed on to the bunker, lobbed two grenades and silenced the post. This act of cool courage and determination so inspired and motivated his Platoon that the objective was taken within minutes. In this heroic action, **Hav. Bir Bahadur Pun** moved forward in the face of deadly fire, in utter disregard of personal safety and led his platoon gallantly.

2550166 HAV. THOMAS PHILLIPOSE, 16 MADRAS

FOR displaying exemplary courage, outstanding bravery and exemplary devotion to duty, in the face of the enemy. **Hav. Thomas Phillipose** was the Platoon Havildar. His Platoon was engaged in the battle of Basantar on the night of 15/16 December, 1971. During the assault, his Platoon Commander received a bullet wound and could not proceed further. **Hav. Thomas Phillipose** then took over the command of the Platoon. Casualties in the Platoon were so heavy that, by the time the objective was captured, the Company strength had been reduced to 15 men. At this time, they were counter-attacked by enemy Infantry. Notwithstanding the depleted strength of his Platoon, **Hav. Thomas Phillipose** displayed conspicuous bravery, devotion to duty and leadership of the highest order. He led a brave counter charge with fixed bayonets with his meagre strength. He enthused and inspired this small force. Although, he received a severe bullet wound himself, the charge led by him was so determined and brave that the enemy got demoralised and fled. **Hav. Thomas Phillipose** displayed resolute leadership under adverse conditions and set brilliant example of courage and devotion to duty.

3355332 L/NK. SHINGARA SINGH, 2 SIKH (POSTHUMOUS)

On 17 December, 1971, during the attack on Pul Kanjri, a strong enemy position, surrounded by anti-personnel and anti-tank mines and supported by a number of Machine Guns, his Platoon came under very heavy ground and Artillery fire, particularly from two Machine Guns on the left flank. L/Nk Shingara Singh was second-in-command of the left-flanking section which got pinned down by continuous fire from these Machine Guns. In utter disregard to his personal safety, L/Nk Shingara Singh made a dash through the mine-field towards the Machine Gun post and hurled a grenade inside the bunker, successfully silencing the gun. Then he charged the second Machine gun post, leapt over the loop-hole and succeeded in physically snatching the gun. In doing so, he received a burst of fire in his abdomen. But underterred, he continued to hold the Machine Gun. The enemy was completely unnerved and fled from the bunker leaving the Machine Gun in L/Nk Shingara Singh's hands. Elimination of these machine guns, enabled own troops to overrun the enemy post, but L/Nk Shingara Singh succumbed to his injuries. In this heroic action, L/Nk Shingara Singh displayed the highest degree of valour and fearlessness and exemplary dedication to duty in the face of the enemy and gallantly sacrificed his life in the highest traditions of the Army.

LT. COL. VED PARKASH AIRY, (IC-7750), GRENADIERS

FOR outstanding courage, initiative, firm determination and inspiring leadership in the face of the enemy. Lt. Col. Ved. Parkash Airy was commanding a Battalion of the Grenadiers, in the battles of Bhairo Nath and Basantar River in the Shakargarh Sector of the Western front. He led his Battalion with cool courage and was always in the fore-front, encouraging and inspiring his men. In the battle of the Basantar River, the Battalion under his able leadership, not only captured the enemy positions after a fierce fight, but held on to them, despite the ferocious counter attacks launched by the enemy. He displayed utter disregard for his personal safety. Despite the heavy shelling and enemy small arms fire, he went from trench to trench, motivating his men to stand fast. Due to his personal example and bold leadership, his Battalion was steadfast and resolute. Throughout this action, Lt. Col. Ved Parkash Airy displayed outstanding leadership and gallantry of a very high order.

LT. COL. RAJ MOHAN VOHRA (IC-6121), ARMoured CORPS

FOR conspicuous gallantry, cool courage and inspiring leadership in the face of the enemy. Lt. Col. Raj Mohan Vohra was commanding a Regiment in the Shakargarh Sector of the Western front. His Regiment spearheaded the advance, capturing in its wake, Bhairo Nath, Thakurdwara, Bari Lagwal, Chamrola, Darman, Chakra and Dehlra. Each of these positions was fortified with tanks, missiles and mine-fields. Displaying sheer confidence and complete disregard for his personal safety, he moved well forward and provided inspiring leadership to his Regiment. During the battle of Basantar River, his Regiment, inspired by his personal example and courage, stood fast against repeated attacks by the enemy Armour and accounted for 27 enemy tanks with minimum casualties to the Unit. Throughout the operations, Lt. Col. Raj Mohan Vohra displayed exceptional leadership and valour in the highest traditions of the Indian Army.

LT. COL. HANUT SINGH (IC-6126), ARMOURED CORPS

FOR outstanding bravery, inspiring leadership, dedication to duty, with complete disregard to his personal safety. **Lt. Col. Hanut Singh** was commanding a Regiment in the Shakargarh Sector of the Western Front. On the 16th December, 1971, his Regiment was inducted into the Basantar River Bridgehead and took up positions ahead of the Infantry. The enemy reacted sharply and launched a number of armoured attacks in strength, on the 16th and 17th December, 1971. Undeterred by enemy Medium Artillery and Tank fire, he moved from one threatened sector to another, with utter disregard for his personal safety. His close presence and cool courage inspired his men to remain steadfast and perform commendable acts of gallantry. Throughout this period, **Lt. Col. Hanut Singh** displayed an aggressive spirit, exceptional leadership and valour in the face of the enemy in keeping with the highest traditions of the Indian Army.

MAJ. AMARJIT SINGH BAL (IC-13377), ARMOURED CORPS

FOR outstanding courage, exemplary leadership and devotion to duty in the face of the enemy. **Major Amarjit Singh Bal** was commanding a squadron of his Regiment during the battle of the Basantar River in the Shakargarh Sector of the Western Front. On the 15th and 16th. December, 1971, the enemy launched a number of armoured counter-attacks against the Jarpal position. Though heavily outnumbered, he displayed exemplary courage, determination and aggressive spirit and, by his personal example, motivated his troops to remain steadfast and resolute and to repulse all enemy attacks inflicting heavy casualties. Throughout this action, **Major Amarjit Singh Bal** displayed grit and determination, outstanding leadership and exceptional devotion to duty in keeping with the highest traditions of the Indian Army.

BRIG. JOGINDER SINGH BAKSHI (IC-4870), JAT

BRIG. Joginder Singh Bakshi was commanding a Mountain Brigade on the Eastern Front. Between the 7th December and 16th December, 1971, the Brigade under his daring leadership, launched a series of successful attacks and captured a number of well prepared enemy localities, culminating in the capture of Bogra. **Brig. Joginder Singh Bakshi** displayed professional competence of a high order, and by his daring execution, out-witted the opposing forces, breaking the enemy's resistance and resulting in the capture of a large number of men and equipment, including the Commander of 205 Brigade of the Pakistani Army. Throughout the operation, **Brig. Joginder Singh Bakshi** was in the fore-front. His meticulous planning, relentless offensive action and disregard for his personal safety, inspired his Command to achieve great success.

9212865 SEP. ANSUYA PRASAD, 10 MAHAR, (POSTHUMOUS)

FOR commendable courage, exemplary gallantry and extra-ordinary devotion to duty in the face of the enemy. **Sep. Ansuya Prasad** was a young soldier who had recently joined his Unit on completion of his recruit training. On the 29th November, 1971, his Battalion was given the task of capturing an enemy position as a part of our defensive operations on the Eastern Front. The enemy was occupying a well fortified building, which dominated the entire area around it. During the attack, the assaulting troops were held up by heavy automatic fire from enemy Machine Guns. It soon became apparent that the building would

- **A COMMEMORATIVE VOLUME**
- **FIRST OF ITS KIND**
- The book to commemorate the services rendered by our Armed Forces to the cause of our National Freedom, Honour and Integrity.
- Over nine hundred profusely illustrated pages devoted and dedicated to those whose services have been recognised and rewarded by the grateful Government and the People.
- The book which must be a "**MUST**" in every library if the youth to-day, and in the years to come, have to know the milestones to our national glory and the men who registered them.



DISTINGUISHED SOLDIER SONS OF INDIA

FEATURING

- Biographical notes and photographs of (a) Union Presidents and Supreme Commanders of the Armed Forces (b) Union Prime Ministers (c) Union Defence Ministers and (d) Chiefs of Staff, Army-Navy and Air Force (1947-72)
- Military awards instituted after 1947-72 illustration, description and eligibility of each.
- Military Award Winners—1947-72 Citation and Photograph of each.

Compiled and Edited by :—

JASWANT SINGH Mg. Editor
Indian Armed Forces Year Book

Price : Rs. 50/- Excluding Transit Charges

NO POSTAL CHARGES ON ADVANCE BOOKING

BOOK YOUR ORDERS NOW AND ADDRESS

YOUR ORDERS TO : MISS SHANTHA NAIR, SECRETARY,

INDIAN ARMED FORCES YEAR BOOK

Maneckji Wadia Building, Mahatma Gandhi Road, Bombay I

- *Make your Cheques/Drafts/M.Os payable to :*
INDIAN ARMED FORCES YEAR BOOK ONLY

have to be neutralised before own troops could close in on the enemy bunkers surrounding it. Since it was not possible to call for air support or Artillery fire, due to the close proximity of own troops, it was decided to send a suicide squad to get into the enemy defences by stealth and set the building on fire. Sep. Ansuya Prasad volunteered for the task. Taking a few phosphorous grenades, with utter disregard for his personal safety, he crawled towards the enemy positions. During the process, he was shot in both his legs. But the gallant young soldier did not abandon his mission. He succeeded in crawling upto the building. He noticed a stack of ammunition in one of the rear rooms of the building, selected it as his target and started crawling towards it. While doing so, he received Machine Gun burst in his shoulder. Undeterred by his wounds and, though bleeding profusely, he crawled upto the room with great difficulty and lobbed the grenades, setting the building on fire before succumbing to his wounds. His gallant action forced the enemy to abandon the building and enabled own troops to capture the objective. In this action, Sep. Ansuya Prasad, inspite of his young age and inexperience, showed outstanding courage, utter disregard to his personal safety, and made the supreme sacrifice in the call of duty.

BRIG. ARUN SHRIDHAR VAIDYA, MVC, AVSM (IC-1701), ARMoured CORPS (Bar to Maha Vir Chakra).

FOR showing outstanding courage, great professional skill, indomitable will, foresight and imagination in fighting against the enemy. **Brig. Arun Shridhar Vaidya** was commander of an Armoured Brigade in the Zafarwal sector during the operations against Pakistan. From the very outset, Brig. Vaidya keenly associated himself with the operational plans and built up an accurate picture of the likely pattern of tank battle. With great professional skill, fore-sight and imagination, he planned the operation meticulously and motivated and briefed his regimental commanders so well that they gained complete confidence in themselves and in the Brigade Commander. When the operations commenced, he moved his Brigade determinedly and swiftly to get to grips with the enemy. When his troops hit the first mine-field, he carried out the breakthrough with daring, and in record time, and took the enemy tanks by surprise. He employed his tanks relentlessly and aggressively and helped the Division to maintain constant pressure and momentum of advance against the enemy. In the battle of Chakra and Dehlra, the going was difficult for tanks on account of an 800 yards deep mine-field and difficulties of terrain. In a cool and confident manner, Brig. Vaidya undertook the crossing through the mine-field. When the going got difficult, he personally moved forward, disregarding his personal safety. Through his inspired leadership, the entire squadron pushed through the lane and quickly deployed itself to meet the enemy's counter-attacks. But for his judicious, yet aggressive employment of armour, it would have been difficult for the Division to advance about 20 kilometers in the enemy territory in so short a time. During the battle of Basantar, he again displayed his professional skill and superb leadership. With calm confidence, he got his tanks through one of the deepest minefields, expanded the bridge-head and repulsed a strong enemy counter-attack. The enemy was ruthlessly flayed and beaten. In this epic battle, 62 enemy tanks were destroyed and the rest limped back in retreat. This would not have been possible, but for the skilful and devastating handling of armour by Brig. Arun Shridhar Vaidya.

CAPT. DEVINDER SINGH AHLAWAT (IC-19161), 10 DOGRA (POSTHUMOUS)

FOR showing exemplary courage, inspiring leadership and complete disregard of personal safety in the face of the enemy. **Capt. Devinder Singh Ahlawat** was leading a Company during an attack on the night of 5/6 December 1971, for the capture of Dera Baba Nanak Bridge-head. His Battalion had been allotted the task of capturing the East end of the bridge. The enemy defences here were based on a series of concrete embankments, having anti-tank guns and heavy and light automatics. The Company led by **Capt. Devinder Singh Ahlawat** came under devastating Medium Machine Gun fire from a concrete pill-box. With complete disregard to his life, **Capt. Ahlawat** charged the pill-box and silenced the gun, thus making it possible to continue the momentum of the attack and over-run the objective. In this action, **Capt. Devinder Singh Ahlawat** lost his life. His body was found, with six bullet wounds, still clutching the Machine Gun barrel. He made the supreme sacrifice. By doing so, he, not only inspired the men under his command, but also displayed extreme courage in keeping with the highest traditions of the Army.

LT. COL. SHAMSHER SINGH, (IC-7018), GUARDS:

FOR displaying outstanding leadership, great courage, exemplary devotion to duty and complete disregard of personal safety in the face of the enemy. **Lt. Col. Shamsher Singh** was commanding a Battalion of Guards during the attack on Morapara and Naopara in the Eastern Sector. The enemy had put up formidable defences with well-co-ordinated Artillery, Tank and Machine Gun fire, combined with mines, wire and booby traps. In spite of strong opposition with effective fire from the enemy, the Battalion managed to get a foot-hold on the objective and held on to it tenaciously notwithstanding heavy casualties in bunker to bunker fighting. The enemy launched a series of counter-attacks during which the Battalion ran short of ammunition. Undaunted, **Lt. Col. Shamsher Singh** resorted to hand to hand fighting and personally directed his troops moving from place to place and encouraging his men to hold the position at all costs. Simultaneously, he arranged for timely Artillery and Medium Machine Gun support. After regrouping his Battalion, he launched a fresh attack and, despite heavy opposition, succeeded in completing the capture of the objective inflicting heavy casualties on the enemy.

MAJ. VIJAY KUMAR BERRY (IC-11567), PARA :

FOR displaying outstanding leadership, indomitable courage and complete disregard of personal safety in the face of the enemy. After the cease-fire on 17th December, 1971, Pakistan troops occupied an area approximately 600 yards inside Indian border in the Western Sector and developed this into a defence locality with mine-fields all around it. The locality was dominated by other defensive positions across the border held in strength by the enemy. His battalion was given the task of clearing this encroachment. **Maj. Vijay Kumar Berry** was ordered to capture this locality on the night of 27th/28th December, 1971. His Company faced heavy enemy shelling and was dispersed. Undaunted by the enemy shelling **Maj. Vijay Kumar Berry** rallied together his men and continued the assault. His Company, which had been depleted to two Platoons, was subjected to intense shelling. With cool courage and devotion to duty, **Maj. Berry** pressed home the attack. Leading his men through the mine-field, he charged the enemy positions, without regard to

personal safety and reached the objective. The enemy, however, subjected the position to heavy Artillery and Mortar fire for the next twelve hours. Undaunted, Maj. Vijay Kumar Berry moved from section to section, at great risk to his life, inspiring his men and dispersing his depleted Company to avoid further casualties. He held on to the captured ground despite heavy casualties and cleared the intrusion.

BRIG. ANAND SARUP (IC-4501), 8 GORKHA RIFLES :

BRIG. Anand Sarup was allotted the task of organising and leading into the offensive an ad-hoc force. He organised and stimulated this force quickly and efficiently and turned it into a hard-hitting team which engaged the enemy at Pathangar and in the area North of Fenny town. By keeping pressure on the enemy and effectively organising his intelligence, he boldly and relentlessly pursued the enemy. Troops under his command fought gallantly during the tough battle at Nazir Hat, Kumir Hat and Bhatiari. Brig. Anand Sarup was constantly on the move, well forward with his troops directing the battles. The rapid and long advance made by his force was entirely due to his gallant dash, drive and high professional skill. Through his outstanding leadership, personal courage and determination, he achieved outstanding results with an ad hoc formation.

2850287 NK SUGAN SINGH, 7 RAJ. RIF. (POSTHUMOUS) :

ON 9 December 1971, 7 Raj Rif were ordered to break the crust of the formidable enemy defences at Maynamati, which comprised well prepared concrete bunkers housing 42 Medium Machine Guns whose cross-fire covered every possible approach. **Nk. Sujan Singh** was commanding one of the assaulting Sections. When the assaulting troops closed on to the objective, the Medium Machine Guns opened devastating fire and held up the assault. Realising the gravity of the situation, **Nk. Sujan Singh** charged at one of the Medium Machine Gun posts. He received a burst in his shoulder. Bleeding profusely, with one arm practically dangling, he crawled up to the bunker and lobbed a hand grenade killing two men. The second medium Machine Gun was still active. Although, he had bled profusely, he charged at the second Medium Machine Gun, but could not carry himself and fell down. Undeterred, he then crawled up to the bunker with a grenade in his hand and fell on the loophole. The grenade slipped from his hand into the bunker and killed three of the enemy along with him. In sacrificing his life in this manner **Nk. Sujan Singh** ensured success of the assault. He displayed valour of the highest order.

ENGINEERS & MANUFACTURERS

MANUFACTURERS OF ALL KINDS OF STAINLESS STEEL & HIGH TENSILE
BOLTS, NUTS, SCREWS AND SUGAR, CEMENT AND
TEXTILE MACHINERY PARTS.

BANEGAR BROS, ENG. WORKS

139, Bapu Khote Street, Bombay 3. Phone : 335796
J. Karia Industrial Estate, 35/43, Musa Killedar Street,
Building No. 3, Unit No. 35/36 Jacob Circle,
Bombay 11 BC. Phone : 370807

With Best Compliments from

Swifts Private Limited

Manufacturers of

"SWIFTS 150" OFFSET DUPLICATOR

MARATHE UDYOG BHAVAN.
NEW PRABHADEVI ROAD,
BOMBAY-25 (DD)

PHONE : 452433
451322

*WITH BEST COMPLIMENTS
FROM*

Vidyut Cable & Rubber Industries,

66, GOVT. INDUSTRIAL ESTATE,
KANDIVLI, (WEST,) BOMBAY-67.

Manufacturers of :

Natural & Synthetic Moulded & Extruded Rubber parts viz.,
Gaskets, Diaphragms, Packings, Channels,
Rubber Bonded Metal Parts,
Anything in rubber to customers requirements.

Specialists in :

Rubberised Cork Sheets and Gaskets Ebonite Mouldings

HOSES:

Suction & Delivery for Agricultural & Industrial purposes.

MAHA VIR CHAKRA (NAVY)**COMMANDER KASARGOD PATNASHOTTI GOPAL RAO, VSM.:**

A SMALL Task Group of the Western Fleet carried out a sweep on the enemy coast off Karachi on the night of 4/5th December, 1971. Notwithstanding the threat of enemy air, surface and submarine attack, the officer led his Task Group deep into enemy waters and succeeded in locating two groups of larger enemy warships. Despite the heavy gun fire from enemy Destroyers, and at great risk to our ships and personnel, the officer resolutely pressed home a determined attack which resulted in the sinking of two enemy Destroyers and one minesweeper according to information available, then. Probably, some more ships were also sunk. After the surface engagement with enemy warships, the officer ordered his Task Group to penetrate deeper into enemy waters and successfully bombarded the port of Karachi, setting fire to oil and other installations in the harbour. He displayed exceptional courage, outstanding leadership in action, daring and conspicuous gallantry in the face of the enemy.

COMMANDER BABRU BAHAN YADAV :

THE officer was the Squadron Commander of a Division of ships which formed part of the Task Group of the Western Fleet ordered to carry out an offensive sweep on the enemy coast off Karachi on the night of 4/5th December, 1971. Notwithstanding the threat of enemy air, surface and submarine attack, the officer led his Division of ships deep into the enemy waters and encountered two groups of larger enemy warships. Despite the heavy gun fire from the enemy destroyers, and at great risk to his ships and personnel, the officer, with exceptional courage and outstanding leadership, led his Squadron towards the enemy in a swift and determined attack. As a result, two enemy destroyers and one minesweeper were sunk according to information available then. Probably some more ships were also sunk in this attack. He displayed exceptional courage, outstanding leadership and conspicuous bravery in the face of the enemy.

ACTING CAPTAIN MAHENDRA NATH MULLA, IN (HOSTHUMOUS) :

TWO ships of the Indian Navy under the command of Captain Mahendra Nath Mulla, Senior Officer, 14th Frigate Squadron, were employed on Hunter Killer Operations to locate and destroy a Pakistani submarine in the North Arabian Sea. During these operations, on the night of 9th December, 1971, Indian Naval Ship KHUKRI was hit by torpedoes fired by an enemy submarine and sank. Having decided to abandon the ship, Captain Mulla, without regard to his own personal safety, supervised the arrangements for the rescue of his Ships' Company in a very cool, calm and methodical manner. Even at a later stage, whilst the ship was sinking, he showed presence of mind and continued to direct rescue operations and refused to save himself by giving his own life-saving gear to a sailor. Having directed as many of his men as possible to leave the ship, Captain Mulla went back to the bridge to see what further rescue operations he could perform. In doing so, he was last seen going down with his ship. His action and behaviour, and the example he set, was in keeping with the highest traditions of the Service. Captain

Mulla displayed exceptional courage, conspicuous gallantry and self sacrifice in the face of enemy.

LIEUTENANT COMMANDER SANTOSH KUMAR GUPTA, N.M. :

LIEUTENANT Commander Santosh Kumar Gupta, Commanding Officer of an Indian Navy Air Squadron, operating from the Air-craft Carrier **INS VIKRANT**, led a total of eleven very successful strike missions, with devastating effects on enemy ships and heavily defended shore facilities in various sectors of Bangla Desh. On 9 Dec. 71, he pressed home a strike of Sea Hawk aircraft against enemy targets in Khulna in the face of a fierce barrage of anti-air-craft gun fire. His aircraft was hit and damaged by the enemy fire. However, regardless of his personal safety, and in the face of extreme danger, he continued to lead the attack with indomitable determination and skill and then led his division on board back safely. He showed great courage and professional ability in landing his damaged aircraft safely on board the carrier. On the remaining missions he, on all occasions, successfully led his squadron to attack harbour and shore installations and against enemy shipping with crippling effect, in spite of heavy ground opposition. This eventually assisted in the successful termination of resistance from the enemy in Chalna, Khulna and Chittagong area. Throughout the operations, he exercised exceptional control and command of his Squadron and inspired his pilots by personal example. His leadership during the entire operations, and his gallant action during the mission on 8 Dec. 71, in the face of heavy ground fire, were in keeping with the highest traditions of the Service.

LIEUTENANT COMMANDER JOSEPH PIUS ALFRED NORONHA :

LIEUTENANT Commander Joseph Pius Alfred Noronha was, in command of Indian Naval Ship **PANVEL**. His ship formed part of **Force Alfa**, which was entrusted with the task of attacking enemy targets in Mongla and Khulna areas during the period 8 to 11 Dec. 71. The force was subjected to incessant air attacks while operating off Khulna. Two patrol boats of the force were sunk as a result of the air attacks. At about the same time, the enemy shore defences began to engage **Panvel**. The officer handled his ship in most competent and fearless manner in very restricted waters and managed to effectively engage the enemy position on the water front. The officer inspired his men by personal example. He and his Ship's Company fought the enemy in a close quarters situation for a prolonged period. His selfless bravery, utter disregard to his personal safety, leadership and untiring energy inspired his men to rise to great heights. He succeeded in silencing enemy's shore defences and caused very extensive damage to the vital enemy installations. His performance was in keeping with the highest traditions of the Service.

COMMANDER MOHAN NARYAN RAO SAMANT :

COMMANDER M.N.R. Samant was the Senior Officer of **Force Alfa** consisting of 4 Craft, which carried out most daring and highly successful attacks on the enemy, off Mongla and Khulna Ports. Manoeuvring his squadron through a most hazardous and unfamiliar and unexpected route, he achieved complete surprise and routed the enemy in Mongla, inflicting very heavy losses. He then proceeded to attack Khulna to destroy the enemy entrenched in strength in the Port. A bitter fight ensued in which the force was subjected to incessant air

attacks. Two boats belonging to the Mukti Bahini operating with the Force were sunk. In utter disregard of his personal safety, the officer, not only managed to pick up a large number of survivors, but persisted with fierce attacks on the enemy with devastating results. Commander Samant had a number of narrow escapes, but refused to withdraw to safer waters. By his personal example and high qualities of leadership, he inspired his men to rise to the occasion and fight most gallantly. This performance of the officer in the face of stiff opposition, with complete disregard to his personal safety, was in keeping with the highest traditions of the Navy.

CAPTAIN SWARAJ PARKASH, AVSM. :

CAPTAIN Swaraj Parkash Commanded Indian Naval Ship **VIKRANT** which was the nucleus of the Naval blockading and strike force operating against the enemy in the Bay of Bengal. Throughout the period of these operations, the ship was operating in most hazardous waters and was the principal target, both for the enemy sub-marines and aircraft. The officer displayed great professional skill, tenacity and valour. With indomitable spirit, he launched ceaseless offensive operations against the enemy. The successful air strikes from the Vikrant had devastating effect on ports all along the Bangla Desh coast. Complete supremacy of our Naval force symbolised by the Vikrant paralysed the enemy, shattered his morale and considerably expedited the enemy's capitulation in the Eastern Theatre. Captain Parakash displayed inspiring leadership, professional skill and devotion to duty of a very high order in keeping with the best traditions of the Service.

LEADING SEAMAN, C. SINGH, (CD 2). No. 87600.

LEADING SEAMAN, C. SINGH, was a member of the Naval Team entrusted with the task of demolitions. He was left alone in remote places and performed his tasks with untiring zeal and energy. He always displayed exceptional devotion to duty, sound practical knowledge and high qualities of leadership. On 6th December 1971, he joined **M. V. PADMA**. The ship formed part of **Force Alfa**, which was entrusted with the task of attacking enemy targets in Mongla and Khulna area during the period 8-11 December 1971. The force was subjected to air attacks while operating off Khulna and his boat was sunk. He was very badly wounded by shrapnel. The enemy shore defences opened fire at the survivors in the water. Leading Seaman C. Singh noticed that two survivors, including an injured officer, were finding it difficult to keep afloat. In spite of being injured, and unmindful of his personal safety, he went to their rescue and escorted them to the shore through heavy enemy fire. On reaching the shore, in spite of his wounds, he rushed at the enemy exposing himself to enemy and, thereby making it possible for two colleagues to escape from immediate enemy capture. Leading Seaman C. Singh was eventually over-powered and taken prisoner by the enemy. On the liberation of Bangla Desh, he was recovered and admitted to hospital. His selfless bravery, utter disregard of his personal safety in the face of enemy, and his concern for the safety of his comrades, despite self injury, was beyond the call of normal duty and was in keeping with the highest traditions of the Service.

WITH OUR WARMEST GREETINGS
TO ALL OFFICERS AND MEN
OF OUR GALLANT ARMED FORCES

•

THOSE WHO HAVE LAID DOWN
THEIR LIVES TO DEFEND OUR
NATIONAL FREEDOM, HONOUR AND
INTEGRITY SHALL LIVE IN OUR
HEARTS EVER AND ALWAYS

•

SHAH ENGINEERING & EQUIPMENT CO.

KASSARA STREET, DARUKHANA, BOMBAY-10 DD.

Telegrams: STEELLORD

Telephone : 377795, 377937

THE HOUSE FOR

- O. H. N. S. ■ H. C. H. C.
- EN 24, 36, OTHER EN STEEL BARS
- HIGH SPEED STEELS ■ HOT DIE STEELS
- HIGH CARBON STEELS ■ STAINLESS STEELS

REMEMBER: SHAH'S TOOL & ALLOY STEEL EN 8, 9
CLASS IV STEEL ARE ALWAYS THE "BEST BUY"

MAHA AIR CHAKRA (AIR FORCE)**WING COMMANDER RAMESH SAKHRAM BENEGAL, AVSM, (4220) F. (P)**

AS the Officer Commanding of an Operational Reconnaissance Squadron **Wing Commander Benegal**, carried out a very large number of missions over enemy territory and obtained vital information about enemy Air Force and other installations. These missions entailed flying unarmed and unescorted very deep into enemy territory and to heavily defended targets. The information brought back from these missions facilitated the planning of Army, Air Force and Naval operations and thus directly contributed to the destruction of the Pakistani war machine. It was further to the credit of **Wing Commander Benegal** that he never returned from any of these innumerable missions without having achieved his object in full measure. While flying repeatedly, deep into enemy territory, in an unarmed aircraft, he displayed gallantry, devotion to duty and professional skill of the highest order.

WING COMMANDER HARCHARAN SINGH MANGET (4666) F(P):

AS the Commanding Officer of a Fighter Bomber Squadron, **Wing Commander Manget** undertook a number of interdiction and close support missions and also many photographic reconnaissance sorties, without fighter escort, deep into enemy territory. The information brought by him from the reconnaissance sorties was of great value to the Army, and the Air Force in their operational planning. While on a strike mission, his aircraft was hit thrice by intense anti-aircraft fire but he pressed forward until he found that the other aircraft in his formation had also suffered serious damage. At this point, the enemy interceptors came on the scene. Despite this, he extricated his formation from the hazardous situation and led it safely back to base. On landing, it was found that his aircraft was extensively damaged and major portions of the control surface completely shot away. Only superb flying skill and courage of the highest order could have brought such a badly damaged aircraft back to a safe landing. His leadership of the mission in these circumstances was outstanding. He displayed gallantry, determination and professional skill of the highest order.

WING COMMANDER VIDYA BHUSHAN VASISHT, (4584) F (P) :

Wing Commander Vasisht, the Commanding Officer of an Operational Squadron, led a group of heavy bombers of his squadron to attack an important enemy fuel and ammunition dump at Changa Manga forest on the night of 3rd December 1971. In spite of very heavy enemy ground fire, he pressed home the attacks, and caused severe damage to the target. Again, on the next night, he led another raid to the same target and succeeded in causing further heavy damage in the face of intense enemy ground fire. On the night of 5th December, 1971, he led a formation of his bombers, this time to attack enemy positions in the Haji Pir Pass in Pakistan-occupied Kashmir. The difficulties and dangers of this operation were due, as much to the great volume of ground fire in the target area, as to the hazards of flying his large aircraft and leading his formation at low level through mountainous terrain. In spite of these hazards, **Wing Commander Vasisht** pressed home the attack and achieved marked success in hitting the enemy's positions. In addition

to these, he had led many other missions deep into enemy territory, where opposition could be expected from fighter aircraft and anti-aircraft fire. In all these raids Wing Commander Vasisht completed the tasks assigned to him without any loss to our aircraft. He displayed inspired leadership, exceptional devotion to duty, and conspicuous bravery in repeatedly leading attacks against heavily defended enemy targets, night after night.

SQUADRON LEADER MADHAVENDRA BANERJI, VM, (4898), F(P)

SQUADRON Leader Banerji, a senior pilot in a Fighter Bomber Squadron, led no fewer than 14 missions, in S-22 aircraft within the first week of the war against enemy targets, most of them in support of our Army in the Chhamb battles. During these missions, he destroyed two enemy tanks and two guns. On three occasions, he was personally responsible for attacking the enemy in the face of heavy ground fire, thus relieving pressure on our own troops. He displayed bravery and skill in repeatedly returning to the fray in the face of extremely heavy ground fire.

WING COMMANDER CECIL VIVIAN PARKER, V. M. 4364 F(P) :

WING Commander Parker, the Officer Commanding of a Fighter-Bomber Squadron, led many deep penetration missions into enemy held territory attacking strongly defended targets. While returning from one such mission, his formation was attacked by enemy Sabre aircraft. In the ensuing fight, Wing Commander Parker shot down one Sabre and heavily damaged another. In another mission, he attacked the enemy oil refinery at Attock, in the face of the most intense anti-aircraft and small arms fire, seriously damaging the refinery. In all his missions, the actions of Wing Commander Parker were marked by great courage and determination, and he was a shining example to the other pilots under his command. His leadership, both in peace and war, was outstanding. He displayed devotion to duty, bravery in the face of heavy enemy opposition and courage in leading many missions, day after day.

SQUADRON LEADER RAVINDER NATH BHARDWAJ (5001 F(P) :

SQUADRON Leader Bhardwaj, a senior pilot in a Fighter-Bomber Squadron, led a number of operational missions against a variety of enemy targets. On 5th December, 1971, he led a raid on an enemy airfield. Although the target was heavily defended by anti-aircraft and small arms fire, he pressed home the attack. He himself set fire to an enemy heavy transport aircraft in one of his attacks, and eventually led his mission safely back to base. On 7th December, 1971, he led another mission, this time to a heavily defended power station. Here too, his mission succeeded in causing heavy damage, without any loss to our aircraft. On 10th December, 1971, he led a close support mission to the Chhamb area. During the first attack, his aircraft, as well as that of his number two, were hit by ground fire, and as they pulled out of the attacks, they were engaged by enemy Sabres. He guided his number two out of danger, and then returned to the fray, shooting down a Sabre which crashed inside our lines near the Chhamb bridge. By this time, he was alone, but he returned to the attack against Pakistani tanks and troops, and caused extensive damage to these targets before nursing his damaged aircraft back to base, where he landed safely. He displayed exceptional gallantry, leader-

ship and bravery in the face of heavy odds, which were in the highest traditions of the Air Force.

**WING COMMANDER PADMANABHA GAUTAM, MVC, VM (4482) F(P)
(BAR TO MAHA VIR CHARKRA):**

WING Commander Padmanabha Gautam, MVC, VM, Commanding Officer of a Bomber Squadron, led many missions deep into enemy territory. Notable among these were two raids on the night of the 5th and 7th December, 1971, when he led attacks on Mianwali airfield. On both these occasions, he and his formation were met with intense anti-aircraft fire. Despite that, the target was attacked with great precision, at low level, and heavy damage was inflicted. On other missions, Wg. Cdr. Gautam carried out rocket and four gun attacks on railway marshalling yards in the Montgomery-Raiwind area with conspicuous success. Throughout the period of operations, Wg. Cdr. Gautam displayed ability for cool and clear planning, along with unflinching courage, exemplary flying skill and leadership of the highest order in carrying out many hazardous missions. His conduct was in the finest traditions of the Air Force.

WING COMMANDER MANMOHANBIR SINGH TALWAR (4573) F(P) :

WING Commander Talwar, Commanding Officer of a Bomber Squadron led five day and night bombing missions against very heavily defended enemy targets within the first 10 days of operations. On one of these missions, he inflicted very severe damage to the Pakistani Air Force installations at Sargodha. In a daylight mission in the Chhamb area, in support of the army, he attacked four enemy gun positions near the Munawar Tawi river and effectively silenced three of them, thereby facilitating the advance of our troops in a difficult terrain. Both these targets were heavily defended ; the latter was close to an enemy fighter base from where interception was also likely. Despite this, the officer pressed home his attacks with great determination and much success. His conduct was an inspiration to the crews of the other aircraft which he was leading. The bold leadership, tenacity of purpose, flying skill and bravery displayed by Wing Commander Talwar were largely responsible for the many success's of his squadron.

WING COMMANDER SWAROOP KRISHNA KAUL (4721) Flying (Pilot):

AT the out break of hostilities, Wing Commander S. K. Kaul, the Commanding Officer of a Fighter Bomber Squadron, volunteered for an urgent task to photograph certain areas in Bangla Desh. These photographs were badly needed in order to finalise our Army's assault plans. The officer carried out four missions deep into the enemy territories to cover the heavily defended sectors of Comila, Sylhet and Saidpur. At times, he had to fly as low as 200 feet over the most heavily defended enemy locations. Undaunted, he flew through these barrages, making repeated runs in each of his mission, and successfully completed the task. On 4th December, 1971, he again volunteered for another task to photograph the Tezgaon and Kurmitola airfields. His reconnaissance flights over these two air-fields, in the face of the most sustained and heavy enemy ground fire stood out as acts of heroism, extreme gallantry and devotion to duty. In addition to his reconnaissance exploits he led the very first eight aircraft strike mission over Dacca. In this raid, his formation encountered four enemy aircraft near the target area. With exem-

plary leadership, he manoeuvred his forces in such a manner that two of the enemy aircraft could be shot down and the other two fled. The target thus became clear for attack. Throughout the period of operations, Wing Commander Kaul led his squadron boldly, with tenacity and personally displayed courage of an exceptionally high order in the face of the enemy.

WING COMMANDER ALLAN ALBERT D'COSTA, (4580) F (P) :

WING Commander A. A. D'Costa, the Commanding Officer of a Fighter Bomber Squadron, had brought his squadron up to the highest pitch of operational preparedness. His foresight and leadership paid excellent dividends during the war, as he and the Squadron achieved outstanding results. During the war, the officer led no fewer than 15 missions deep into the enemy territory against heavily defended targets, thus setting a fine example to his pilots. On 4th December he was the first to strike at the enemy's Risalwala airfield. On the same day, he followed up by attacking Chander airfield. On the next day, he led a mission, to Chistian Mandi, where he personally accounted for three enemy tanks, as confirmed by films brought back by him. On 6th December, he led an attack on a concentration of tanks at Dera Baba Nanak, in the face of the most intense anti-aircraft fire. Although his No. 2 was shot down by this ground fire, he pressed home the attack, with utter disregard for his own safety, destroying a number of tanks and damaging others. On 7th December, he carried out a low level photographic reconnaissance mission, in the Sulemanki area and followed this up by leading an attack on the same day, on the railway station at Narowal, where he personally destroyed and damaged many railway wagons, as well as some installations. From 8th to 12th December, he flew a number of reconnaissance missions, bringing back a large volume of intelligence, based on which, air and ground operations were conducted. Thereafter, up to the end of the fighting, he led missions mainly against Railway targets, including the marshalling yards at Raiwind, the Kasur-Lahore railway track, destroying a large number of wagons and causing devastation at each target. All these missions were flown in the face of intense anti-aircraft fire, and in some cases against Pakistani air opposition. His constant example of bravery, determination and skill were an inspiration to the pilots of his squadron. The conspicuous bravery, outstanding leadership, and coolness in the face of heavy opposition, were in the highest traditions of the Air Force.

GROUP CAPTAIN CHANDAN SINGH, AVSM, Vr. C, (3460) F(P) :

GROUP Captain Chandan Singh, AVSM, Vr. C, was the Officer Commanding of an Air Force Station in the East. During the war with Pakistan, he was in the fore-front of the air operations conducted for the liberation of Bangla Desh. Group Captain Chandan Singh was also responsible for the planning and execution of the special helicopter operations to airlift two companies of troops to the Sylhet area. When it became necessary to overcome the obstacles in the advance of the Army towards Dacca, he planned and executed the move of nearly 3000 troops and 40 tons of equipment and heavy guns with the extremely limited helicopter force at his disposal. This operation entailed landing of troops and equipment very near the heavily defended areas by night. Prior to each mission, he personally carried out reconnaissance in the face of severe opposition from the enemy, deep into the enemy territory, to supervise the progress of the helicopter air lift and to guide and inspire his pilots who were facing heavy opposition from

ground fire. Later, he undertook a further 18 missions in the same operation, always leading the landings at new places. On many occasions, his helicopter was hit by ground fire but this did not deter him from further missions. The success of this major airborne operation contributed significantly to the fall of Dacca and the capitulation of the Pakistani armed forces in Bangla Desh. The leadership, drive and determination, coupled with the bravery shown by Group Captain Chandan Singh, over an extended period of time, were in the highest traditions of the Air Force.

BORDER SECURITY FORCE

ASSISTANT COMMANDANT RAM KRISHNA WADHWA, 31 BN BSF, (POSTHUMOUS): For conspicuous gallantry, utter disregard to personal safety, exemplary courage in the face of the enemy and outstanding devotion to duty. The Border Security Force picket at Raja Mohtam had been occupied by the enemy on 5 December, 1971. The next day, **Shri Ram Krishna Wadhwa, Assistant Commandant, 31 Bn BSF**, was allotted the task of recapturing the picket. He had only two platoons at his disposal. He moved his platoons to the forming place inspite of heavy enemy shelling and machine gun fire and went into attack against a much larger and well entrenched enemy force. He was fired upon from all sides and, at one stage, his attack seemed to be failing. Undaunted, Shri Ram Krishna Wadhwa led his troops gallantly, disregarding his personal safety, through heavily mined area and under intense and accurate enemy fire. His personal example inspired and enthused his men who fought gallantly. He went from bunker to bunker, caring little for his life, to alert his men and boost their morale. Facing accurate Machine Gun fire, he himself went to one of the enemy's BMGs and silenced it with a hand grenade. He was ultimately hit by an enemy shell and was killed. Through his inspiring leadership and personal example of heroism, his small force succeeded in recapturing the picket overcoming a much larger enemy force and in holding it against his counter attack. In this gallant act, he made the supreme sacrifice.

WITH BEST COMPLIMENTS FROM

EMKAY WEIGHING EQUIPMENTS

P. B. No. 880 - BOMBAY-I.

SPECIALISTS IN:

WEIGHING, COUNTING AND TESTING MACHINES

Phone : 254418

INDUSTRIAL ABRASIVE CO-OPERATIVE SOCIETY LTD.

MANUFACTURERS AND EXPORTERS OF :—

TIGER BRAND

**GRINDING WHEELS, SEGMENTS, RUBBING BRICKS AND
TRIANGULAR BLOCKS, FINISHED STICKS, HONING STICKS,
SHARPENING STONES, MOUNTED WHEELS AND
POINTS, ETC.**

2nd Floor,
8, Bentick Street,
Calcutta-I.

Kassam Chambers,
163 P. D. Mello Road,
Bombay-I.

Mora-Uran,
Dist. Kolaba,
Maharashtra.

Tel. { Phone 238618
gram INDABRA

Tel, { Phone 261372
261212
gram INDABRA

Phone 45

With Compliments

RAMSON'S RUBBER PRODUCTS

SEWRI — BOMBAY—17

Phone : 441250 — Grams: ISILENTBLOCK

MANUFACTURERS OF :—

**RUBBER TO METAL BONDED
COMPONENTS FOR**

- DEFENCE ● RAILWAYS AND
- INDUSTRIAL ESTABLISHMENTS

VIR CHAKRA—ARMY

Citations not available at the time of going to the Press

Major Devinderjit Singh Pannu (IC-13158), 5 Sikh, (Posthumous); 2/Lt. Jayendra Jai Singh Rane (IC-24201), 5 Garh. Rif. (posthumous); JC-38368 Ris. Brahma Nand, 9 Horse; JC-36940 Sub. Ratan Singh, 23 Punjab; JC-17910 Sub. Rajab Ali, 8 Raj. Rif. (posthumous); JC-46527 Nb. Sub. Man Chand Sharma, 10 Mahar, (posthumous); JC-60528 Nb. Sub. Ram Kala Singh, 9 Guards; 3141913 Company Havildar Major Krishan Singh, 14 Jat, (posthumous); 6038559 Hav. Kunwar Singh Chaudhari, 5 Garh Rif; 2439873 Hav. Des Raj, 9 Punjab; 9205717 Hav. Khazan Singh Sagwan, 12 Guards; 1169089 Hav. (GD) Rama Swamy Chhettiar, 27 AD. Regt; 1171094 Hav. (GD) Gopalkrishnan, 27 AD-Regt; 1181589 Hav. Uttam Jawalge, 151. AD Regt; 1027089 Dfr. Prithi Singh. 8 Cav; 10356147 Hav. (Gnr) Ajmer Singh, 105 AD. Regt; 1155095 Hav. (GD) Gopalakrishnan Nair, 27 AD. Regt; 9070887 L/Hav. Jagdish Singh, 11 J & K Militia; 4141549 L/Hav. Kishan Singh, 4 Kumaon; 3348614 Nk. Naib Singh, 6 Sikh, (posthumous); 53839599 L/Nk. Jar Jang Gurung, 1/4 Gorkha Rifles, (posthumous); 9070949 L/Nk Janak Singh, 1 J & K Militia, (posthumous); 9408833 Rfn. Dhan Bahadur Rai, 7/11 Gorkha Rifles; 4049455 Rfn. Makar Singh Negi, 6 Garh Rif. (posthumous); 1038560 Swr. Jai Singh, 9 Horse; 1277821 Gnr. (GD) Armugam, 151 AD. Regt; 361952 Sep. Rachhapal Singh, 5 Sikh; 9071115 Sep. Mohmad Iqbal, 1 J & K Militia, (posthumous); Capt. Surendra Kaushik (IC-17200), 9 Horse; 2/Lt. Prakash Chandra Singh Khati (SS-24278), 4/1 GR; 2/Lt. Rupinder Singh Sandhu (SS-23317), 4 Kumaon; JC-44856 Sub. Sujana Singh Negi, 5 Garh Rif; JC-35408 Sub. Raj Bhadur Singh; 8 Guards; JC-53298 Nb. Ris. Ram Parikhsan Singh, 45 Cav; JC-42500 Nb. Sub. Gurcharan Singh, 4 Sikh; 4146399 Hav. Madan Singh, 4 Kumaon; 204205 Hav. Budhi Ballabh, 10 Mahar (posthumous); 2440669 Hav. Lokh Raj, 14 Punjab; 3154794 L/Hav. Jaswant Singh, 9 Para; 10270151 L/Dfr. Ram Chander, 63 Cav; 3963905 L/Nk Meghraj Singh, 1 J & K Rif; 3357370 L/Nk. Harbhajan Singh, 4 Sikh; 3364799 Sep. Sampuran Singh, 6 Sikh; 3554638 NCE Mangat Ram, 6 Sikh; 2641259 Hav. Nand Ram, 5 Grenadiers; 2658592 Gdr. Rafiq Khan, 5 Grenadiers, (posthumous); 13722858 Nk. Rajinder Singh, 1 J & K Rif; Maj. Lil Bahadur Gurung (IC-14532), 10 Mahar, (posthumous); Maj. Harpal Singh Grewal (IC-18061), 8 Bihar, (posthumous); Capt. Vishnu Swarup Sharma (SS-20957), 8 Guards; Capt. Gurbaksh Singh Sihota (IC-15471), Artillery; Cap. Tirath Singh (IC-23312), Artillery; 2/Lt. Gurjeet Singh Bajwa (SS-228442), 168 Fd. Regt; 2/Lt. Hawa Singh (SS-23003), 4/5 GR; JC-28067 Sub. Hari Singh, 6 Mahar; JC-400453 Sub. Megdan Gurung, 6/5 GR: (FF); JC-44325 Nb. Sub. Ram Singh, 14 Jat; 11192741 BHM Babu Lal, 129 AD. Regt; (TA); 3140746 Hav. Hem Chander, 3 JAT; 2240521 Hav. Daya Nand Ram, 3 Raj Rif. (posthumous); 2851641 Nk. Raghubir Singh, 8 Raj. Rif; 2447488 Nk. Khajur Singh; 21 Punjab; 11193273 Nk. Dhondy Ram Bhanote, 129 AD Regt; (TA); 13727390 L/Nk. (Unpaid) Magar Singh, 1 J & K Rifles, (posthumous); 492235 Rfn. Pas Bahadur Pun, 4/5 GR; 2658792 Gdr. Murad Khan, 5 Grenadiers, (posthumous); 1193311 ORA Tek Ram, 168 Fd. Regt; 2449735 Sep. Avtar Singh, 21 Punjab, (posthumous); 2964587 Sep. Satyawan Singh, 17 Rajput, (posthumous); 2457287 Sep. Jagjit Singh, 23 Punjab; Maj. Atma Singh Hansara (IC-7470), 12 AOP Flight; Maj. Bimal Kishan Das

Badgol (IC-14797); 1/11 GR; Maj. Ravender Datt Law (IC-11655), 7 Cavalry; Maj. Sarlojeet Singh Ahluwalia (IC-15863), Ladakh Scouts; Maj. Krishan Kumar Pradhan (IC-13647), 1/4 GR; Maj. Shyam Veer Singh Rathere (IC-13775), 5 Grenadiers; Maj. Jitendra Kumar Tomar (IC-13775), 8 Raj. Rif; Maj. Jagmal Singh Rathere (IC-13058), 13 Grenadiers; Capt. Prithvi Pal Singh Sangha (IC-16285), 12 AOP Flight; Capt. Gurmukh Singh Gill (SS-22577), 14 Punjab; Capt. Ravinder Khaura (SS-20095), 39 Med. Regt, (posthumous); Capt. Harbant Singh Kahlon (IC-16433), 175 Fd. Regt; Lt. Suresh Chandra Sharma (SS-23011), 9 Rajput; JC-52206 Nb. Sub. Shoring Wangdus, Ladakh Scouts; 3341590 Hav. Gurdev Singh, 2 Sikh; 3348959 Hav. Malkiat Singh, 6 Sikh; 9136079 L/Hav. Puncjek Stobdan, Ladakh Scouts; 2043099 L/Hav. Bane Singh, 21 Rajput; 2950437 Nk. Raj Singh, 21 Rajput, (posthumous); 2858706 Rfn. Chagan Singh, 12 Raj Rif. (posthumous); 12279927 Spr. Durga Shankar, 1033 Rly. Engrs. (TA); 2660579 Gdr. Mangal Singh, 13 Grenadiers; Lt. Col. Satindra Kumar Kapoor (IC-7414), 9 GR; Maj. Balbir Singh Poonia (IC-13361), 7 Raj Rif; Maj. Som Dutt Sharma (IC-10450), 10 Para; Maj. Punjab Singh (IC-18228), 6 Sikh; Maj. Daljit Singh Sara (IC-21343), 6 Mahar; Maj. Sheel Kumar Puri (IC-12418), 5 GR; Maj. Pradeep Kumar Sharma (IC-13172), 42 Fd. Regt; Maj. Ranbir Singh (IC-8621), 15 Maratha LI; Capt. Gopa Kumar Raman Pillai (IC-21975), Madras Regt; Capt. Raghunath Prasad Chaturvedi (IC-23198), 6 Fd. Regt; Capt. Jitendra Kumar (IC-19997), 42 Fd. Regt; Capt. Vanchitatil Ommen Cherian (SS-20567), 177 Fd. Regt; Capt. Nawal Singh Rajawat (IC-19010), 17 Rajput; Lt. Rajvinder Singh Cheema (IC-23379) 66 Armed Regt; 2/Lt. Baljit Singh Gill (IC-24758), 31 Jat; 2/Lt. Joginder Singh Jaswal (SS-22853), 9 Punjab; JC-33536 Sub. Nanji Ram, 31 Jat; 5434807 Hav. Dal Bahadur Gurung, 5 GR; 10324414 L/Hav. (GD) Kans Raj, 128 AD Regt; (TA); 285359 Nk. Nihal Singh, 10 Para; Maj. Sher Singh (IC-14619), 15 Maratha LI; Maj. Sunhara Singh (IC-20901), 15 Kumaon; Maj. Amrik Singh (IC-18055), 10 Sikh; Capt. Inayat Altaf Yusufji (IC-15992), 5(I) AOP Flight; Capt. Pannikote Madhavan (IC-20198), 5(I) AOP Flight; Capt. Rabindranath Sen Gupta (IC-20475), 164 Fd. Regt; 2/Lt. Ajit Singh (IC-23772), 17 Grenadiers; 2/Lt. Bahadur Singh (IC-24250), 10 Sikh LI, (posthumous); JC-15901 Sub. Gurcharan Singh, SM, 10 Sikh, (posthumous); JC-35642 Sub. Dadarao Ghodeswar, 2 Mahar; 4441429 Hav. Piara Singh, 10 Sikh LI; 3353350 Nk. Gurjant Singh, 10 Sikh, (posthumous); 4152120 (Unpaid) L/Nk. Durga Datt, 15 Kumaon, (posthumous); 2651351 L/Nk. Raghunath Singh, 17 Grenadiers; 4541237 Sep-Kashinath Sivrudra Kamble, 2 Mahar, (posthumous); Maj. Preshant Kumar Chatterjee (IC-11965), 5 Maratha LI; Capt. Madan Paul (IC-18749), 660 AOP Sqn, (posthumous); 2/Lt. Sheshanna Manju Nath (IC-24877), 21 Rajput, (posthumous); 2747481 Nk. Eknath Kardeo, 5 Maratha LI, (posthumous); 1141440 Nk. Bal Bahadur, 29 AD Regt; 2860832 Rfn. Prem Singh, 12 Raj. Rif. (posthumous); Maj. Vinod Kumar Sarda (IC-6715), 2 Para; Maj. Kitkule Prakash Digamber (IC-15664), 82 Lt. Regt; (Towed); Capt. Sukhwant Singh Gill (IC-20521), 18 Fd. Regt; JC-39329 Sub. Vishwa Nath Bhosle, 2 Mahar; JC-4534061 Nb. Sub. Arjan Jadhav, 2 Para; 13716818 Hav. Nirmal Singh, 9 JAK RIF; 92306050 Nk. Fateh Mohammed, Ladakh Scouts; 3144417 L/Hav. Ganga Dhar, 4 Jat; 1179857 Gnr. Bhadroshwar Pathak, 29 AD Regt, (posthumous); Lt. Col. Ram Bahadur Gurung (IC-6724), 2/11 GR; Lt. Col. Suresh Chandra Gupta, (IC-7140), 1/5 GR; Maj. Kamal Nanda, (IC-12307), 4 Horse; Maj. Suraj Jit Chaudhri, (IC-7312), 4 Horse; Capt. Gurmit Singh Punia, (IC-13666), 660 AOP Sqn; Capt. Bharat Chandra Pathak (SS-20520), 4 Fd. Regt; Capt.

Naik Balkrishna Ramachandra (IC-16103), 194 Mtn. Regt; Lt. Tejendra Pal Tyagi (IC-25375), 22 Fd Coy; 13653064 Nb. Sub. Bhrigunath Singh, 7 Guards; JC-51790 Nb. Ris. Noor Mohammad Khan, 18 Cav; 1311154 Nb. Sub. Durai Swami, Engineers; 1034139 L/Dfr. Sushil Kumar, 9 Horse; 9406534 Hav. Phurba Lipoha, 2/11 GR; 1170770 Hav. Kyoharia Mahalakshmi, 64/45 AD Regt; 13652879 Hav. Hari Das Nag, 7 Guards, (posthumous); 13710771 L/Hav. Raghubir Singh, 14 JAK Rifles, (posthumous); 2464113 Sep. Sampuran Singh, 18 Punjab, (posthumous); 2955911 Sep. Birdha Ram, 22 Rajput, (posthumous); 1243715 Gnr. Ajit Singh, 166 Fd. Regt; 4535016 PTR Vajanath Shinde, 2 Para; Lt. Col. Bhartnuhari Trimbak Pandit (IC-7320), 9 Engr. Regt; Maj. Bhaskar Vijay Kumar (IC-16054), Engineers Maj. Nand Dulare (IC-27413), 22 Rajput; Maj. Surinder Vatsa (IC-15055), 59 Engr. Regt. (posthumous); Maj. Trivedi Gopal Krishnan (IC-20021), 8 Grenadiers; Maj. Sadanand Balwant Salunke (IC-18389), 6 Maratha LI; Maj. Manjit Singh Duggal (IC-12641), 194 Mtn. Regt; Maj. Kuldeep Singh Gill (IC-14014), 1/5 GR; Capt. Nagula Palli Narsingh Rao (MR-2646), AMC; Capt. Dhiresk Kumar Sharma (IC-21354), 223 Med. Regt; Capt. Ashok Kumar Karkare (IC-21909), 35 Light Regt. Towed (posthumous); 2/Lt. Tulsian Purshottam (SS-23082), 10 Guards; 2/Lt. Ashok Kumar Nanchahal (SS-23228), 14 Rajput, (posthumous); JC-16783 Sub. Sita Ram, 8 Grenadiers, (posthumous); 4039948 Hav Sangram Singh Rawat, Naga Regt; 2743291 Nk. Shamu Bhosle, 2 Para; 1275280 L/Nk. Shreepati Singh, 26 AD Regt; 5038478 Rfn. Moti Kumar Newar, 5/1 GR, (posthumous); 2647963 Gdr. Gorakh Ram, 8 Grenadiers, (posthumous); Lt. Col. Raj Kumar Suri (IC-8126), 4 Jat; Maj. Chandra Kant (IC-18851), 4 Guards; Maj. Anantanarayanan Krishna-swamy (IC-11114), 10 J & K Rif; Maj. Ashok Kumar Tara, (IC-20506), 14 Guards; Maj. Satish Nambiar (IC-10018), 14 Guards; Maj. Ravi Kumar (IC-14817), 8 Sikh LI; Capt. Ravender Nath Datta (IC-16871), 9 Engr. Regt. (posthumous); Capt. Surjit Singh (IC-23708), 2 Para; Capt. Madan Lal Sharma (SS-19515), 181 Regt; Capt. Vijai Pradap Singh (IC-22198), 56 Mtn. Regt, (posthumous); Capt. Chandra Kant (MR-8580) AMC; Capt. Vikram Deuskar (SS-20902), 1 Horse; Capt. Irala Jayaram Reddy (IC-20990), 164 Fd Regt; 2/Lt. Bharat Singh Kasana (SS-24025), 9 Dogra, (posthumous); 2/Lt. Hardev Pal Nayyar (SS-23397), 8 Sikh LI, (posthumous); 2/Lt. Premjit Singh Chima (SS-23365), Engineers (posthumous); JC-39418 Sub. Sreedhara Dass, 18 Madras (posthumous); JC-37034 Sub. Nima Lama, 4/8 GR; JC-56028 Nb. Ris. Dayal Singh, Scinde Horse; 2743482 Hav. Krishna Gurao, 1 Maratha LI; 1026586 Dfr. Harbir Singh, 80 Armoured Regt; (posthumous); 2951096 L/Hav. Gian Chand, 22 Rajput (posthumous); 1021241 L/Hav. Laxman Rane, 1 Maratha LI (posthumous); 2550237 Nk. Mani, 18 Madras (posthumous); 4244322 L/Nk. Chandraket Prasad Yadav, 7 Bihar; 2756356 Sepoy Krishna Jagdale, 5 Maratha LI; 5034537 Rfn. Man Bahadur Pun, 5/1 GR (posthumous); 4443002 Sep. Sawaran Singh, 8 Sikh LI; 4444564 Sep. Boota Singh, 8 Sikh LI; 2760210 Sep. Hanmant Krishna More, 15 Maratha LI; 5743894 Rfn. Dalip Singh Thapa, 5/8 GR; (posthumous); Lt. Col. Raj Singh, SM (IC-4028), Grenadiers; Maj. Patinhare Veetil Shadevan (IC-22366), 16 Madras; Maj. Gurdev Singh Jaswal (IC-16008), Punjab (posthumous); Maj. Vikram Kumar Anand (IC-16611), 3 Sikh LI; Shergill Maj. Govind Singh (IC-6881), Maj. Malvinder Singh Shergill (IC-13152), 7 Cav; Maj. Virender Singh Ruhil (IC-12414), Artillery; Capt. Naresh Kumar Parmar (MS-8542) AMC; 2/Lt. Satish Kumar Jaswal (IC-23805), 1 Dogra, (posthumous); JC-44930 Nb. Ris Mohan Singh, 17 Horse; JC-33019 Sub. Pritam Singh, 3 Sikh LI; (posthumous);

JC-41312 Sub. Lal Bahadur Pun, 5/5 GR; 2444085 L/Hav. Dilbagh Singh, 22 Punjab, (posthumous); 1026534 L/Hav. Jaswant Singh, 3 Grenadiers; 2558988 Nk. Sahadevan, 6 Madras, (posthumous); 2552653 Nk. Jajua Sanyasi, 6 Madras; 2645231 Nk. Sirdar Khan, 5 Grenadiers; 2647494 Gdr. Ram Kumar, 3 Grenadiers; 1043502 Swr. Mohan Singh, 17 Horse; Lt. Col. Kuldeep Singh Brar (IC-6732), 1 Maratha LI; Lt. Col. Narinder Nath Rawat (IC-6451), 166 Fd. Regt; Lt. Col. Prakash Chander Sawhney, (IC-6797), 10 Bihar; Maj. Vetri Nathan (IC-13991), 2/11 GR (posthumous); Maj. Ravinder Kumar Arora (EC-58565), 10 Sikh LI; Maj. Sushil Kumar Sarda (IC-12099), 2 Mahar; Maj. Inder Prakchu Kharbanda (IC-18612), 4 Guards; Maj. Kuppanda Ponnappa Manjappa (SS-19466), 12 Kumaon; Maj. Dharampal Singh (IC-13817), 10 Bihar; Maj. Manoptkia Mandappa Ravi (SS-19469), 10 Bihar; Maj. Sukhpal Singh (IC-19213), 4 Jat; Maj. Vijay Kumar Vaid (IC-21303), 4 Grenadiers; Capt. Rajendra Singh Vijay Singh Daffe (SS-19786), 1 Maratha LI; 2/Lt. Kanwarjit Singh, (IC-24921), Scinde Horse, (posthumous); JC-43961 Sub. Brijendra Singh, 4 Jat; 5334168 Hav. Sem Bahadur Thapa, 3/1 GR; (posthumous); 4042984 L/Nk. Gabar Singh Negi, 3 Garhwal; 444667 Sep. Karnail Singh, 8 Sikh LI., (posthumous); 2649837 Gdr. Gurbux Singh, 4 Grenadiers, (posthumous); 2658007 Gdr. Amrit, 4 Grenadiers; 3365976 Sep. Mohan Singh, 10 Sikh; LI. Col. Francis Tebberious Dias, (IC-7044), 5/11 GR; Maj. Narain Singh, (IC-18086), 4 Jat, (posthumous); Maj. Ramesh Kumar Dadkar, (IC-14290), 22 Maratha LI; (posthumous); Maj. Jai Bhagwan Singh Yadav, (IC-16095), 5/11 GR; Maj. Abjeet Singh Mamik, (IC-14461), 5/11 GR; Capt. Satish Chander Sehgal, (IC-20044), 75 Med. Regt; (posthumous); Maj. Harish Kumar Chopra, (IC-13761), 161 FD. Regt; Capt. Gopalam Lakshminarayana Swamy, (MS-8733), AMC; Capt. Davinder Singh Rajput (SS-20705), 4 Rajput; Capt. Surendra Nath, (MS-8540), AMC Capt. Rabinder Nath Anand, IC-18742 17 Med. Regt; (posthumous); 2/Lt. Rohit Sethi, (IC-24323), 1/9 GR; 2/Lt. Avtar Singh Ahlawat, (IC-24180), 17 Horse; 2/Lt. Tajender Singh, (SS-22989), 104 Engr. Regt; 2/Lt. Prabodh Chandra Bhardwaj, (IC-24178), 1 Para; 4039278 Hav. Devendra Singh Kandari, 17 Kumaon, (posthumous); 3140688 Hav. Raghbir Singh, 1 Para; 5233730 Hav. Tek Bahadur Gurung, 4 Para (posthumous); JC-54759 Nb. Ris. Basta Singh, 69 Armd Regt; 2956048 Nk. Ramesh Chand, 4 Rajput, (posthumous); 2550753 Nk. Bhaskaran, 17 Madras; 5437972 L/Nk. Gobardhan Adhikari, 2/5 GR; (posthumous); Lt. Col. Ian Lawlor Patric (IC-10891), 6 Bihar; 2544424 Nb. Sub. Cheriyan, 4 Madras, (posthumous); 2959144 L/Nk. Bisheshwar Singh, 21 Rajput; Maj. Rajender Singh Rajawat (IC-18128), 18 Raj. Rif. (posthumous); 2/Lt. David Alexandner Devdason (SS-22831), 1 Mahar (posthumous); 5833405 L/Hav. Joginder Singh Sen, 3/9 GR; 4540674 Sep. Kachru Salve, 1 Mahar; 5840320 Rfn. Uday Bahadur Khattri, 3/9 GR; Maj. Shashi Pal Singh (IC-18798), 6 Rajput, (posthumous); Maj. Hardev Singh Grewal (IC-21289), 9 Jat, (posthumous); Capt. Satish Kumar Vashist (IC-23301), 2 Rajput; Capt. Surjit Singh Parmar (SS-21614), 64 Mtn. Regt; 1031008 ALD. Katar Singh, 72 Armd Regt; 2450841 Sep. Mehar Singh, 3 Punjab (posthumous); 2951940 Sep. Udai Raj Singh, 6 Rajput; 4156190 Sep. Ganga Singh, 9 Kumaon; 5744329 Rfn. Padam Bahadur Thapa, 8 GR;

HERE IS YOUR MUST.

"Distinguished Soldier Sons of India"

Pp. 950— Price Rs. 50/-

VIR CHAKRA — AIR FORCE

Flight Lt. Roy Andrew Massey, (8428) F(P); Flight Lt. Mandepanda Appachu Ganapathy, (9464) F(P); Flying Officer Donald Lazarus, (10516) F(P); Wing Commander Donald Molvin Conquest, (5692) F(P); Sqn. Ldr. Jiwa Singh, (4893) F(P) (posthumous); Flt. Lt. Iqbal Ali Sayed, (8420) F(P); Wing Cdr. Arun Kanti Mukherjee, VM, (4416) F(P); Flt. Lt. Govind Chandra Singh Rajwar, VSM, (8103) F(N); Wg. Cdr. Narinder Chatrath (3959), F(P); Wg. Cdr. Ramanathan Sunderesan (4574), F(P); Wg. Cdr. Krishan Kumar Badhwar (4669), F(P); Sqn. Ldr. Ganshyam Singh Thapa (6003), F(N); Sqn. Ldr. Shek Prataprao Shinde (5671), F(P); Flt. Lt. Chidambaram Sarangapani Chandrasekaran, (8768) F(P); Flt. Lt. Manbir Singh (6771) F(P); Flt. Lt. Arun Laxman Deeskar (9058), F(P); Flying Officer Shankaranarayanan Balasubramanian (10864) F(P); Sqn. Ldr. Gursaran Singh Ahluwalia, (4912) F(P); Flt. Lt. Prem Bhushan Kalra (8466) F(N); Sqn. Ldr. Charanjit Singh, VSM, (4823) F(P); Flt. Lt. Nitin Gajanan Junnarkar, (7477) F(N); Sqn. Ldr. Krishan Kumar Bakshi, (5012) F(P); Sqn. Ldr. Charanjit Singh Sandhu (5591) F(P); Flying Officer Harish Masand (11272) F(P); Flying Officer Ballachandra Chengapa Karumbaya, (10604) F(P); Wg. Cdr. K. C. Aggarwal (4434) F(P); Sqn. Ldr. A. B. Lamba (4713) F(P); Sqn. Ldr. V. N. Johri (5676) F(P); Sqn. Ldr. R. N. Bali (5059) F(P); Sqn. Ldr. Kirpal Singh, VM, (5115) F(P); Flt. Lt. P. K. Vaid (6892) F(P); Flt. Lt. S. Jayandra (8423) F(P); Flt. Lt. D. C. Nayyar (8995) F(P); Flt. Lt. V. K. Wahi (10114) F(P); (posthumous); Flt. Lt. V. K. Neb, Vr. C., (8189) F(P); (Bar to Vir Chakra); Sqn. Ldr. D. C. Bhandary (5219) F(N); Sqn. Ldr. K. K. Dutta (5450) F(N); Sqn. Ldr. Jagbir Singh (5783) F(P); Sqn. Ldr. D. K. Dass (6334) F(P); Flt. Lt. M. S. Sekhon, VM (6756) F(P); Flt. Lt. V. Sathaya (9039) F(P); Flt. Lt. R. C. Gosain (9447) F(P); Sqn. Ldr. S. D. Karnik, (5056) F(P); Flt. Lt. R. K. Sinha, (9032) F(P); Flt. Lt. A. Raghunath, (9122) F(N); Flt. Lt. J. P. Saklani, (9554) F(P); Flt. Lt. P. R. Jamsaji, (9834) F(P); Sqn. Ldr. A. K. Bhadra, (5414) F(P); Flt. Lt. M. S. Sandhu, (8101) F(P); Flt. Lt. D. K. Dighe, (9745) F(P); Flt. Lt. R. S. Wahi (9830) F(P); Flt. Lt. K. S. Sahota, (9848) F(P); Wg. Cdr. Ravinder Nath Dogra, (4725) F(P); Sqn. Ldr. Ramesh Chander Sachdeva, (5306) F(P); (posthumous); Sqn. Ldr. Ramesh Chandre Kohli (4891) F(P); Sqn. Ldr. Sindha-gatta Subbaramu, (5371) F(P); Flt. Lt. Harbans Prominder Singh, (7485) F(N); Fg. Offr. Bartan Ramesh, (10948) F(P); Sqn. Ldr. Allan David Alley, (4915) F(P); Sqn. Ldr. Iqbal Singh Bindra, (6360) F(P); Flt. Lt. Shivinder Singh Bains (7727) F(P); Flt. Lt. Mahabir Prasad Premi, (8370) F(P); Flt. Lt. Lawrence Fredric Pereira, (8678), F(P), (posthumous); Flt. Lt. Ashok Kumar Singh, (9481) F(P); Flt. Lt. Niraj Kukreja (8733) F(P); Flt. Lt. Aruna Kumar Datta (9738) F(P); Flt. Lt. Parminder Paul Singh Kawatra (41383) F(P); Fg. Officer Mohan Dikshit (11309) F(P); Fg. Officer Sukhdev Singh Dhillon (11378) F(P); Fg. Officer Jai Singh Gahalawat (11280) F(P); Wg. Cdr. Bhupendra Kumar Bishnoi (4594) F(P); Flt. Lt. Kikke Sreekantasastry Suresh (6742) F(P); Flt. Lt. Syed Shahid Hussain Naqvi (7193) F(P); Flt. Lt. Bharat Bhushan Seni (9392) F(P); Flt. Lt. Somar Bikram Shah (9413) F(P); Flt. Lt. Partha Das Gupta (9770) F(P); Sqn. Ldr. Jasjit Singh, (5100) F(P); Sqn. Ldr. Sanjay Kumar Choudhury, (5863) F(P); Sqn. Ldr. Jal Maniksha Mistry, (5006) F(P), (posthumous); Flt. Lt. Chandra Mohan Singla, (6893) F(P); Flt. Lt. Surinder Singh Malhotra, (8449) F(P); Flt. Lt. Cherry Hassanand Raney, (8782) F(P); Flt. Lt. Hemant Sharat Kumar Sardesai, (9463) F(P); Flt. Lt. Pradip Vinayak Apte, (10456) F(P), (posthumous);

Fg. Offr. Kishan Lakhimal Malkani, (10576) F(P); (posthumous); Sqn. Ldr. Farekh Jehangir Mehta (4906) F(P); Gp. Capt. Robert Arnold Weir, (3881), F(P); Wg. Cdr. Murari Lal Trehon, (4577), F(P); Flt. Lt. Winston Rabiner Sanjeeva Rao, (10191), F(P); Sqn. Ldr. Preetpal Singh Gill (6342) F(P); Flt. Lt. Yogendra Prasad Singh (9867) F(N); Flt. Lt. Manjit Singh Dhillon, VM (7021) F(P); Flt. Lt. Andre Rudolph DA Costa (8175) F(P), (posthumous); Sqn. Ldr. Vinod Kumar Bhatia, Vr. C. (6497) F(P); (Bar to Vir Chakra).

VIR-CHAKRA—NAVY

Cdr. Kailash Nath Zadur; Lt. Cdr. Inderjit Sharma, AVSM; Lt. Cdr. Om Prakash Mehta, NM; Lt. Cdr. Bahadur Nariman Kavina; Megh Nath Sangal, MCEAP-2 (No. 50896); Lakshman Kumar Chakarvarty, Mech. 3, (No. 48830); Mughilissery Ouseph Thomachan, P.O. PRI, (No. 46337); Ravindra Nath Sharma, PO TEL, No. 88301; Lt. Cdr. Ashok Roy, NM, (missing); Lt. Cdr. Ashwani Kumar Mehra (P); Lt. Cdr. Ravindra Das Dhir (P); Lt. Cdr. Sankar Prasad Ghosh (O); Lt. Cdr. Souriarajulu Ramasagar (P); Lt. Raminder Singh Sodhi; (P); Lt. Bipinchandra Bhaskar Bhagwat (O); Lt. Koshar Singh Panwar (O); Lt. Virendra Kumar Datta (P); Lt. Prem Kumar (P); Capt. Kumara Madhava Velappan Nair; Cdr. Sahblok Suresh Kumar; Lt. Cdr. ((SDB) Inder Singh; Lt. Cdr. Vijai Jorath; Lt. Arun Prakash (P); Cdr. Mukadavil Ommen (Missing); Lt. Cdr. Joginder Krishan Suri (missing); Lt. Cdr. Prabhat Kumar (missing); Lt. Suresh Gajanan Samant (posthumous); Lt. Cdr. Jayanta Kumar Roy; Choudhury; Lt. Suvesh Kumar Mitter; Cdr. Benoy Roy Chowhury; Cd; Rajinder Singh Grewal, NM; Capt. Rustom Khushre Shapoorjee Gandhir. Capt. Padavupurackal Chandy Andrews; Cdr. Vijai Singh Shokhawat; Lt. Cdr. Rajat Kumar Sen, (posthumous); Cdr. Subir Paul; Cdr. Roy Joseph Millan; Lt. Cdr. George Martis, NM; Lt. Vijai Prakash Kapil; Capt. Manohar Prahala Awati; Capt. Jagdish Chandra Puri, SM; Cdr. Laxminaryan Ramdas, VSM; Sub. Lt. Ashok Kumar; Kapalli Sai Raju, LEM (P), No. 89148; Surgeon Lt. Sudhansu Sekhar Panda, (posthumous).

VIR-CHAKRA—BORDER SECURITY FORCE

66232027 Sub. Inspr Ajit Singh, 23 Bn BSF; 66276064 Head Constable Mohinder Singh, 26 Bn BS (posthumous); 67276037 Nk. Chanan Singh, 27 Bn BSF; 647 Shri Joginder Singh, Dty. Cdt. BSF, (posthumous); 1265 Shri Chandan Singh Chandol, Asstt. Comdt. 3 Bn BSF; 68588913 Nk. Umed Singh, 61 Bn BSF; Lt. Col. N. G. O'Conner (IC1-578), 70 Bn BSF; 613, Dy. Comdt. Inderjit Singh Uppal, 78 Bn BSF, (posthumous); 68176022 Head Constable Hari Singh, 17 Bn BSF. **SPECIAL FRONTIER FORCE**—Lt. Col. Prasanta Coomar Purkayashat (IC-2486), Garhwal Rifles; Maj. Raj Kumar Malhotra (IC-20824), 4 Para; Maj. Harish Chandra Sharma (IC-21075), JAT; Maj. Savendra Singh Negi (IC-22805), Grenadiers; Asstt. Company Commander GG Valankar **JAMMU AND KASHMIR MILITIA**: Lt. Col. Jasbir Pal Singh (IC-5984), 8 J & K Militia; Maj. Virendra Kumar (IC-2269), 8 J & K Militia; JC 2255 Nb. Sub. Sultan Mohammed Khan, 9 J & K Militia, (posthumous); 907279 L/NK. Mohan Lal, 8 J & K Militia, (posthumous).

SHAURYA CHAKRA

Sqn. Ldr. Gopal Krishan Arora, (4864) F (N), (posthumous) ; 246295 Cpl. Surmukh Singh, Inst. Rep. I ; 291190 LAC Omkar Singh, FMA ; (All Air Force) Maj. Vishnu Datta Sharama (IC-10048), 26 AD Regt., 2/Lt. Ravindranathan Male-dath (SS-23795), Engineers ; JC-33686 Sub. Sewa Singh, Engineers (All Army). Ayirookuayil Joseph Baby, LMA, No. 80298 (Navy); 6582936 Civ (Dvr.) Kannan, 511 ASC Bn ; T. NO. 207 Civ Labour Munshi Ram (All Army); Lt. Cdr. Sajjan Kumar ; Bipra Charan Mahapatra, NM, MCPO II, No. 60128 (All Navy), Flt. Lt. Virsa Singh Mall (9602) AE (L), (Air Force); Shri Chatar Singh, 2 Grenadiers (Army); G/9898 Pnr Mahabir Yadav, 1610 Pnr Coy (GREF), (posthumous), (General Reserve Engr Force) ; Mangal Bhai Patel, LME, No. 87199 ; Narain Atti Marad, Ag. LME, No. 56163 (All Navy); Shri Apar Singh Cheema, Asst. Station Master, Gurdaspur Railway Station (Air Force) ; 5235359 L/Nk Bhim Bahadur Thapa, 1/3 GR (Army) ; G/4134 Engine Artificer Kirpa Ram, 6 Sur-facing Coy; G/140069 Pnr Raj Mal, 1620 Pnr Coy ; G/9898 Pnr Mahabi Yadav, 1610 Pnr Coy, (posthumous) ; (All Gref) ; Shri Cheewang Namgyal S/o Shri Nurbu, Vill Hundel, Dist. Leh ; Shri Stenzin Tundur S/o Chhewang Stenzin, Vill Aranau, Dist. Leh. (All Nubra Guards); G/104506 Supdt. Gde. I, Harbans Singh, 26 RMU ; G/54982 DMF Sewa Singh, 26 RMU, (All General Reserve Engineer Force) ; Shri Ram Parakash, Asstt Station Master, Kotkapura, Nor-thern Rly ; Shri Balbir Singh, Leading Fireman, Kotkapura, Northern Rly ; Shri Balwant Singh, Engine Driver, Kotkapura, Northern Rly.

For Your Requirements of

- FLUSH DOORS,
- SHUTTERING PLYWOOD,
- PLYWOOD,
- BLOCK BOARDS,
- SOFT BOARDS.

CONTACT:

ABDEALLYS119 Bazargate Street,
BOMBAY-I.

Phone : 26 92 48

Gram : IMPEXAGENT

**OUR BUSINESS TO SERVE THE ARMED FORCES
WHO HAVE SERVED OUR COUNTRY THE BEST**

WE

**PLEDGE OUR SERVICES
TO THOSE WHO HAVE
FOUGHT AND LAID
DOWN THEIR LIVES
SO THAT MASSES
OF OUR PEOPLE LIVE
*FREE AND UNFETTERED***



DAUDBHOY M. TAYEBALI
(GLASS MERCHANT)
**110. ABDUL REHMAN STREET
BOMBAY-3**

Phone :- 320810 - 325236

Gram :- "SAFEGLOSS"

PARAM VISHISHT SEVA MEDAL (ARMY)

MAJ. GEN. HARISH CHANDRA RAI (IC-592), COS HQ. WESTERN COMMAND : Major General Harish Chandra Rai, as Chief of Staff Western Command had to undertake the main burden of organising the move of various formations, including the Command Headquarters and meeting their administrative requirements. Both, before and during the operations, Major General Harish Chandra Rai displayed singular devotion to duty working long hours, over extended periods, keeping in touch with and co-ordinating the actions of various formations and arranging air support for them. By doing so, he contributed in a large measure to the success of the operations in the Western Sector. Throughout this difficult period, he showed commendable grasp of operations and, as the Chief of Staff, rendered distinguished service of the most exceptional order.

MAJ. GEN. JACK FREDERICK RALPH JACOB (IC-470), COS, HQ. EASTERN COMMAND : In the operations in the Eastern Theatre, leading to the liberation of Bangla Desh, the contribution of Maj. Gen. Jack Fredrick Ralph Jacob, was pivotal and most valuable. As Chief of Staff, Eastern Command, he worked for long hours, over an extended period, without loss of efficiency and displayed a firm grip and outstanding organising ability. He was responsible for detailed planning and execution of administrative and logistic support. His handling of these difficult problems during operations was highly imaginative, thorough and efficient. He displayed devotion to duty, unstinted loyalty and outstanding ability and rendered distinguished service of the most exceptional order.

MAJ. GEN. BISWA NATH SARKAR (IC-1417), DIR. OF OPS. HQ. EASTERN COMMAND: As Director of Operations, Headquarters Eastern Command, Maj. Gen. Biswa Nath Sarkar rendered outstanding services. In spite of the complex nature of the task entrusted to him, he got down to it devotedly and assiduously and was able, within a short time, to bring the entire structure of the operation under effective control. He had to work long hours and undertake extensive touring, practically without break. His untiring efforts, zeal and tact were responsible for the outstanding result achieved during the operations. He displayed great devotion to duty and rendered distinguished service of the most exceptional order.

MAJ. GEN. GURBAKSH SINGH (IC-630), GOC, 101 COMN. ZONE AREA : Maj. Gen. Gurbaksh Singh, was the General Officer Commanding, 101 Communication Zone Area. During the operations, he played a highly significant and important role in the area of his responsibility. He handled his task with enthusiasm and imagination. In spite of paucity of resources, he continued to act offensively and was able to tie down a large number of enemy troops in Sylhet and Mymensing Districts. In planning offensive operations from Meghalaya towards Mymensing and Dacca, Maj. Gen. Gurbaksh Singh showed great deal of imagination and sound tactical and administrative ability. Though, he was himself seriously wounded, as a result of an accident, early during the operations, the planning done by him was largely responsible for the brilliant success of the operations. Maj. Gen. Gurbaksh Singh displayed great deal of zeal, professional competence and distinguished service of an exceptional order.

MAJ. GEN. DALBIR SINGH (IC-557), GOC 9 INF. DIV. : Maj. Gen. Dalbir Singh Commanded the 9th. Infantry Division in operations in the Jessore Sector. He planned operations with great skill and launched his Division with commendable zeal, drive and professional competence. He kept up relentless pressure on the enemy and by superior tactics unhinged the enemy inflicting heavy losses on him. Throughout these operations, Maj. Gen. Dalbir Singh was in the forefront. He displayed highly imaginative and inspiring leadership and distinguished service of the most exceptional order.

MAJ. GEN. LACHMAN SINGH LEHL, VR C (IC-1461), GOC 20 MTN. DIV. : Maj. Gen. Lachman Singh Lehl was the General Officer Commanding, 20 Mountain Division during the fighting in the North-West Sector of Bangla Desh. Throughout these operations, he led his Division with single-minded determination and his personal encouragement, drive and presence in the forward areas, contributed largely to the success of the operations. The actions fought by this Division at Gobindganj, Bhaduria and Borga were brilliant and carried out with lightning speed. The Division maintained a relentless pressure on the enemy and advanced more than 125 kilometers on the main axis. Maj. Gen. Lachman Singh Lehl displayed outstanding qualities of leadership and distinguished service of the most exceptional order.

LT. GEN. EDGAR GEORGE PETTENGELL (IC-795), SIGNALS : Lt. Gen. Edgar George Pettengell initiated with outstanding imagination and foresight and supervised most diligently the necessary measures during the pre-emergency period to ensure that signal communications would stand up to the strains of war. Although resources were limited, he deployed these to the best advantage. His fore-thought and planning paid rich dividends during the operations. His professional competence, initiative and boundless energy were of immense assistance to the commanders in the field. He provided them with the means for exercising effective command and control before and during the conflict. His dedication to duty, professional skill and dynamism were in the best traditions of the Service. He rendered distinguished service of the most exceptional order.

MAJ. GEN. NARYANA PILLAI SANKARAN NAIR (IC-2042), MADRAS : Maj. Gen. Narayana Pillai Sankaran Nair displayed remarkable professional competence, boundless energy, drive and determination ; initiated and implemented numerous measures, including large scale troop movements, required during the pre-emergency and war period. By judicious allocation of trained manpower for new raisings and mobilisation of units, he was able to increase the fighting strength of the Army within the existing manpower ceilings. His personal relations with the Ministries of Defence and Finance (Defence) went a long way to ensure that there was no hold-up in the measures necessary to make the field force and the administrative set up function at peak efficiency. Maj. Gen. Narayana Pillai Sankaran Nair displayed fore-thought, proper planning and zealous dedication to duty and rendered distinguished service of the most exceptional order.

MAJ. GENERAL MOHINDER SINGH BRAR (IC-1528), ARTILLERY : Maj. Gen. Mohinder Singh Brar displayed, during the operations from 4 December, 1971, to 15 December, 1971, remarkable enthusiasm and most effective handling of his command. Through his initiative and personal leadership, he achieved

remarkable results. Notwithstanding stiff opposition from the enemy, he captured Jibanagar and swiftly moved towards Uthali and Darsana from directions unexpected by the enemy and succeeded in eliminating the enemy position from the north flank of his axis of advance. He then quickly regrouped his forces and made a two pronged thrust towards Jhenida, upsetting the enemy's plans for giving a battle in that area and forcing him to fall back towards Kushtia. He then pressed his attack with unabated vigour and cleared the enemy upto the Hardinge Bridge well ahead of schedule. He then advanced towards the East from two different flanks, simultaneously putting strong blocks in the rear, thus hastening the enemy's collapse, in this sector. Throughout these operations, Maj. Gen. Mohinder Singh Brar showed sound generalship, personal courage and bold and imaginative handling and rendered distinguished service of the most exceptional order.

MAJ. GENERAL EUSTACE D'SOUZA (IC-518), MARATHA : Maj. Gen. Eustace D'Souza displayed inspiring leadership, outstanding professional ability, skilful handling of formations under his command in the operations in the Gulmarg Sector. From the beginning of the outbreak of hostilities, he maintained pressure on the enemy thereby retaining the initiative and with swift moves, his Division captured 72 square kilometers of enemy territory and seized several areas of strategic importance. He was entrusted with the additional task of establishing close liaison with the civil administration with a view to restoring and promoting confidence among the civil population in the Sector. Despite Pakistani propaganda, he maintained excellent rapport between the Army and civil authorities through perseverance, ingenuity, enthusiasm and untiring efforts. Maj. Gen. Eustace D'Souza displayed inspiring leadership and rendered distinguished service of an exceptional order during the India-Pakistan conflict.

MAJ. GEN. KUNDAN SINGH (IC-1522), RAJ RIF : As General Officer Commanding of an Infantry Division, Maj. Gen. Kundan Singh was entrusted with the onerous task of defending a vast area in Jammu and Kashmir. In addition, he was given certain limited offensive tasks. From December 3, 1971 to December 7, 1971, the enemy launched a major attack in the Poonch Sector. Simultaneously, the enemy introduced a group of infiltrators in the Mandi area. Maj. Gen. Kundan Singh displayed great skill in planning the operations against the enemy and showed excellent leadership during the execution of his operations. With efficient utilisation of his resources, he beat back every enemy attack. On 10th December 1971, Maj. Gen. Kundan Singh successfully directed operations for the capture of two tactically important features dominating the road from Hajira to Kotli. The thorough planning and leadership shown by Maj. Gen. Kundan Singh was responsible for frustrating all attempts by the enemy to capture Poonch. He did not let the enemy occupy a single post in his area and defeated all attempts at infiltration. He rendered most distinguished service of an exceptionally high order.

MAJ. GEN. SURAJ PRAKASH MALHOTRA (IC-1804), GUARDS : Maj. Gen. Suraj Prakash Malhotra was given the task of defending Ladakh and protecting the Shyok Valley and Kargil areas, during the Indo-Pakistan operations. He was further given the task of capturing certain areas opposite Kargil, to ensure security of own lines of communications to Leh. Maj. Gen. Malhotra planned and conducted the operations in Kargil Area and Partapur Sector, starting from

7 December 1971, with remarkable zeal and great ability. These operations were conducted with great speed and, in just one week, his forces were able to capture 40 posts in Kargil area, destroying 200 enemy troops and capturing large quantities of weapons and equipment. Similar success was achieved in the Shyok Valley, where a small force was able to advance well beyond Turtok and capture 700 square kilometers of enemy territory, inflicting heavy casualties. During these operations, in extremely difficult conditions, at high altitude and sub-zero temperatures, Maj. Gen. Suraj Prakash Malhotra exhibited outstanding qualities of leadership and inspired his men to achieve exceptionally commendable results. His able planning and execution ensured that the operations in this sector were a complete success. He rendered distinguished service of the highest order.

MAJ. GEN. RAIZADA DEV RAJ ANAND (IC-2097), ARMED. CORPS : Maj. Gen. Raizada Dev. Raj Anand showed outstanding organising ability, great courage and drive and exemplary devotion to duty. His performance as a Divisional Commander in battle was commendable. He was instrumental in carrying out the deepest penetration into enemy territory and capturing maximum area of ground across the Rajasthan border. During the operations from 4 December, 1971, to 17 December 1971, Maj. Gen. Raizada Dev Raj Anand displayed great drive in getting his troops forward to Naya Chor and solved, as far as feasible, the problems of sandy terrain, lack of water and absence of roads and tracks. He was always well forward with his troops and gave excellent guidance to them in their attacks on the enemy, who fled every time they were attacked. In spite of heavy enemy air attacks, he maintained the momentum of his attacks and, by his personal control and direction, boosted the morale of his troops, who achieved remarkable success. Considering that he took over command of the Division only four months before the conflict, he rendered distinguished service of the most exceptional order.

MAJ. GEN. RUSTAM FRAMJI KHAMBATTA (IC-1047), ARTILLERY : Maj. Gen. Rustam Framji Khambatta displayed great competence, organising ability, skilful planning and drive during and after the operations from 3 December, 1971 to 17 December 1971. He had taken over the Division only a few months earlier, and by hard work and diligence he grasped the operational plans and carried out training accordingly. During the battle of Longewala from 5 December 1971 to 9 December 1971, he displayed an outstanding offensive spirit and carried out the operations to throw out the enemy from own territory and to inflict severe casualties on enemy with excellent planning and remarkable drive. At the same time, he continued to carry out attacks on other enemy positions. His dedication to duty, good grip over all operations and most efficient administration was responsible for the remarkable success achieved by his Division. He rendered distinguished service of the most exceptional order as a Division Commander in battle.

MAJ. GEN. FRANK DALTON LARKINS (IC-482), ARTILLERY : Maj. Gen. Frank Dalton Larkins was entrusted with the formidable task of modernising the equipment of the Army, planning for the requirements of the future and ensuring their timely induction against a very tight time-frame. He was also responsible for conducting trials on new equipments and their speedy inductions into the Army. He was a member of a number of official delegations entrusted

with the task of procurement of new equipment from foreign countries. With his resourcefulness, mature judgement, sound knowledge of the equipment and an eye for detail, he was able to procure the best equipment at minimum cost and at maximum speed, resulting in efficiency as well as economy. He was constantly on the vigil for improvement and streamlining of all types of equipment. The remarkable success of the Army during the recent operations against Pakistan, bore testimony to the sound planning and provisioning of weapons and equipment shown by this officer. By his hard work, perseverance, extreme devotion to duty, Maj. Gen. Frank Dalton Larkins set a fine personal example of dedicated service. He rendered most distinguished service of an exceptionally high order.

HON. MAJ. GEN. SUJAN SINGH UBAN, AVSM (RETD) (IC-1003) :

Maj. General Sujan Singh Uban AVSM was deputed to carry out a hazardous operation in Bangla Desh with his force. His force was airlifted and thereafter operated independently and entirely on very limited air supply in most difficult terrain. The mission allotted to Maj. Gen. Sujan Singh Uban was successfully completed. This resulted in the liberation of the Chittagong Hill Tract as also of breaking up of Mizo hostile camps organised by Pakistan. The success of the operation was largely due to the initiative, drive and sound planning by Maj. Gen. Uban, AVSM.

BRIG. SHABEG SINGH, AVSM, (IC-778), GORKHA RIFLES :

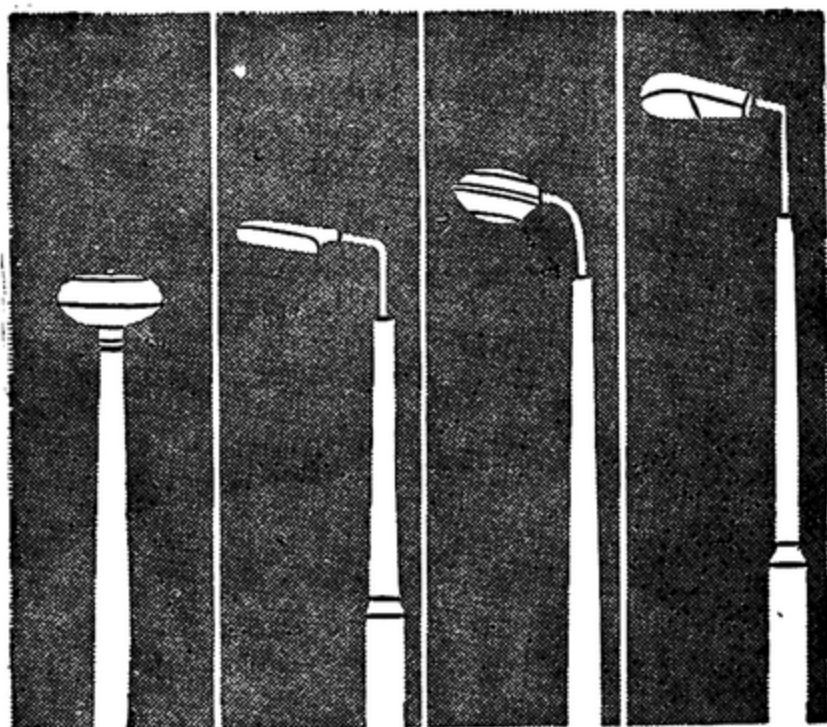
Brigadier Shabeg Singh, AVSM, was a Sector Commander during the operations against the Pakistani forces on the Eastern Front. He applied himself to his task with dedication and professional competence. He was very successful in motivating his troops and they were most effective in his area of responsibility, keeping the Pakistani forces fully stretched. He displayed remarkable qualities of leadership in stabilizing a sector held by his troops, thereby contributing to the capture of Brahman Baria. In carrying out all these tasks, Brigadier Shabeg Singh displayed exemplary devotion to duty and by his untiring and dedicated efforts rendered distinguished service of the most exceptional order.

MAJ. GEN. STANLEY LESLIE MENEZES, SC, (IC-540) GRENADIERS :

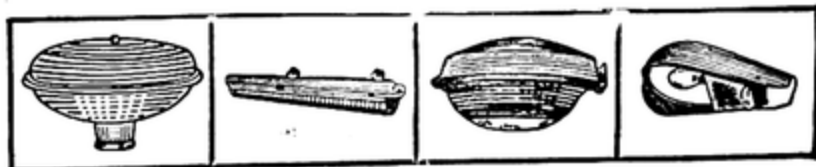
Maj. Gen. Stanley Leslie Menezes was the Chief of Staff of a Corps during the recent operations against Pakistan on the Western front. Both before and during the operations, he was conspicuous for his zeal and efficiency. He worked for long hours over an extended period without loss of efficiency and displayed a firm grip and outstanding organisational ability. During the hostilities, he showed good grasp of the operations and remarkable resourcefulness and ability, particularly in the logistic sphere. He kept a firm control over the Headquarters and displayed a marked ability to implement policy. Throughout this period, Maj. Gen. Stanley Leslie Menezes showed a very high sense of duty and rendered distinguished service with utter disregard for his personal comfort.

MAJ. GEN. WALTER ANTHONY GUSTAVE PINTO (IC-605), GUARDS :

Maj. Gen. W. A. G. Pinto was Commanding an Infantry Division in the Zafarwal sector of the Western front. During the advance, his formation encountered a series of mine barriers of varying depth in succession, which restricted manoeuvre. Undeterred and undaunted by these unexpected obstacles, the difficult terrain and enemy opposition, Maj. Gen. Pinto rose magnificently to the occasion and, by



**METONIC RENDERS FREE SERVICES
TO SOLVE YOUR LIGHTING PROBLEMS
• STREET LIGHTING A SPECIALITY •**



GITART



METONIC

LIGHTING FIXTURES

HEAD OFFICE & FACTORY: 121-122, S. V. ROAD, DAHISAR (E), BOMBAY-68.

• PHONE: 662127 • GRAM: METONICAL

BRANCHES AT: MADRAS, PHONE: 20375 • DELHI, PHONE: 584691

his meticulous planning and bold executions, not only did his formation breach the mine-fields but unsettled the opposing force. Under his able guidance, his formation launched a number of attacks against well prepared enemy defences and all objectives were successfully carried, often at the point of bayonet. Maj. Gen. Pinto's planning and conduct of the battle of Basantar River was praiseworthy. He, not only successfully contrived to breach a mine barrier a mile in depth, but also secured and retained the bridgehead across the Basantar River in a fiercely contested battle during which he inflicted crippling casualties on two Infantry and One Armoured Brigades of the Pakistan Army. Throughout this operation, Maj. Gen. Walter Anthony Gustave Pinto displayed cool courage, inspiring leadership, high degree of professional skill and by his assiduous planning and conduct of operations, rendered distinguished service of the most exceptional order.

MAJ. GEN. BEJOY MOHAN BHATTACHARJEA (IC-1338), MVC, GARH RIF: Maj. Gen. Bejoy Mohan Bhattacharjea was commanding an Infantry Division during the operations against Pakistan on the Western front. The enemy launched a series of attacks in strength with Infantry and Armour in his sector, but these were repulsed with heavy losses. Throughout these operations, Maj. Gen. Bhattacharjea remained in the fore-front and inspired confidence in his Command by his close presence in the threatened sectors. A number of posts changed hands many times. However, by his determined efforts, he ensured that the enemy was not permitted to gain a foothold in his sector. The capture of Dera Baba Nanak bridgehead was planned by him in meticulous detail. He personally remained well forward during the execution of his plan, unmindful of the heavy enemy Artillery fire and inspired his command to beat back repeated enemy counter-attacks. The stoic defence of the Ranian screen position and the offensive spirit and determination displayed by the troops was due to his high degree of motivation and the inspiring leadership of Maj. Gen. Bhattacharjea. During the operations Maj. Gen. Bejoy Mohan Bhattacharjea displayed sound tactical ability, personal courage and determination of a high order. He showed utter disregard for his personal safety and, by his competent planning and bold execution, inflicted crippling blows on the Pakistani forces. He rendered distinguished service of the most exceptional order.

MAJ. GEN. ANIL KUMAR BISWAS (IC-1185) AOC: Maj. Gen. Anil Kumar Biswas was responsible for the provision of Ordnance cover during the operations. In addition, he was made responsible to ensure that the newly raised units/formations were properly equipped. This involved detailed planning of procurement of the entire range of ordnance stores and moving them to forward formations in accordance with operational and tactical requirements. Maj. Gen. Biswas met this challenging responsibility with fore-sight, imaginative planning and efficiency of the highest order. To ensure quick supplies and speedy movement of stores, he made personal liaison with all concerned, including the Director General of Supplies and Disposal, the Director General of Ordnance Factories, the General Managers of Railways and even the General Managers of various factories producing ordnance stores. He invariably anticipated requirements of stores and when these were formally projected, the stores were either ready for issue or steps had already been taken for their procurement. To achieve

this, he had to work constantly for long hours. It was due to his fore-sight and advance planning that, it was possible to provide adequate logistic support in the various theatres of operations at short notice. Maj. Gen. Biswas worked with dedicated zeal and devotion to duty and rendered meritorious service of the most exceptional order.

MAJ. GEN. VED PARKASH (MR-177), AMC : Maj. Gen. Ved Parkash devoted his attention to the medical side of the operational plans, undertook an intensive tour of the entire area, studied the problems on the ground and made a comprehensive, practical and efficient medical plan for the treatment and evacuation of casualties. He organised and supervised the raising of a number of medical units in areas where no medical facilities were previously available and ensured by his personal supervision that, these units were set up quickly and were running efficiently. The evacuation of casualties from Meghalaya, Assam and Tripura was night-marish problem. With great energy, zeal and personal efforts, Maj. Gen. Ved Parkash was able to organise evacuation of casualties by rail, road and air most efficiently. Throughout the operations, despite heavy casualties, there was no hold up and all casualties were quickly evacuated and efficiently treated, thus maintaining and raising the morale of the fighting troops. Maj. Gen. Ved Parkash worked extremely hard and with commendable zeal and dedication. He thus rendered exceptional meritorious service of the highest order during the operations.

MAJ. GEN. RAM DHARMADAS HIRA, MVC, (IC-2531), 11 GR : The Division Commanded by Maj. Gen. Ram Dharmadas Hira, MVC, in the Eastern Sector, was hurriedly reassembled from internal defence duties, for operations in the Belonia area. He quickly and ably prepared the Division for war and planned its operations in a most able and thorough manner. He skilfully conducted the operations in the Belonia bulge and thereafter switched over to Chaudhram-Laksham-Chandpur axis, with speed and efficiency. Showing great professional competence, he planned and conducted his rapid advance, contained the enemy at Laksham and made deep thrusts towards River Meghana, which led to the fall of the strategic River port of Chandpur. Maj. Gen. Hira was always well ahead with his troops and led them with great energy, resourcefulness and drive. He rendered outstanding and meritorious service of the highest order.

MAJ. GEN. BENJAMIN FRANKLIN GONSALVES (IC-1884), ARTILLERY : Maj. Gen. Benjamin Franklin Gonsalves commanded a Division in the Eastern Sector during the operations. He led his troops with great courage, dash and drive during the tough battles of Akhaura, Baria and Kaligunj. The toughest of these battles at Akhaura, where his troops fought gallantly and successfully under his able leadership. His Division advanced determinedly and swiftly across several river obstacles in record time and was in the vanguard at the fall of Dacca. Throughout the operations, Maj. Gen. Gonsalves displayed outstanding professional ability, determination and skill. He has rendered exemplary and meritorious service in the highest traditions of the Army.

MAJ. GEN. KOTIKALAPUDI VENKATA KRISHNARAO (IC-1164) MAHAR : Maj. Gen. Kotikalapudi Venkata Krishnarao, as Commander of a Division in the Sylhet Sector, displayed outstanding leadership, courage, determination and drive. During the operations, his Division fought tough battles at Shamsheer Nagar, Gazipur, Kalura and Sylhet. He planned his operations most skilfully and was always well ahead with his troops, at times under heavy enemy Artillery fire. During these operations, he had displayed outstanding and inspiring leadership, professional competence, drive and great resourcefulness. Under his able leadership, the performance of his Division was of a very high order. He rendered exceptionally meritorious service of a very high order.

MAJ. GEN. PRATURE VANKATA RAMANIAH (MR-183), AMC: Maj. Gen. Prature Venkata Ramaniah was responsible for providing medical cover in support of large scale operations in his Command. By his fore-thought, thorough planning and co-ordination, he successfully knit and organised the entire medical set-up in his Command in a highly efficient manner. It was entirely due to his foresight, pre-planning and capable execution of plans that adequate medical cover was available when a large number of formations and units were inducted at short notice. The most efficient manner in which quick evacuation and timely care and treatment of the personnel wounded during the operations was carried out bore testimony to the high technical and professional ability and organising capacity of Maj. Gen. Ramaniah. He displayed exemplary devotion and dedication to the cause of the Service and rendered outstanding and meritorious service of the highest order.

WITH BEST COMPLIMENTS FROM

STEAM RADIATORS CORPORATION

DESIGNERS & MANUFACTURERS OF

Heat Exchangers, Oil Coolers, Air Heaters & Air
Coolers Dryers, & Processing Machinery
Tailor Made for any product

Office :

3-A, Ashirwad
Building,
Govandi Road,
Chembur,
Bombay-71

524403

Associate Concern

**VIRTEX ENGINEERS
LAXMI PLASTICS & METAL
WORKS**

Works:

Madan Mohan Silk
Mills Compound,
Sonawala Cross Road,
Goregaon (East),
Bombay-63

694259

WITH OUR WARMEST GREETINGS TO
ALL OFFICERS AND MEN OF OUR
GALLANT ARMED FORCES

NAGJIBHAI TIDABHAI & CO.

55-59, CHAMPA GALI, BOMBAY 2.

Phone : 313407 — 692445 (Resi.) ■ Gram : LOHIRUGS.

Manufacturers of :

WOOLLEN RUGS, SHAWLS AND STAPLE GOODS

BRANCH :

DEEPAK TEXTILE MILLS

OUTSIDE LAHORI GATE, AMRITSAR, PUNJAB

Manufacturers of :

WOOLLEN RUGS, SHAWLS AND STAPLE GOODS

WITH BEST COMPLIMENTS

FROM



LUMALA INDUSTRIES PVT. LTD.

Phone :

3 5 8 5 1 4

3 8 2 1 9 8

3 5 8 5 1 9

Grams :

" MAGNITUDE "

702, PRASAD CHAMBERS,
TATA ROAD, No. 2, BOMBAY-4.

Manufacturer of :

**PRECISION BALL BEARING
STEEL BALLS**

NAVY

REAR ADMIRAL ELENJIKAL CHANDY KURUVILA, AVSM : Rear Admiral E. C. Kuruvila, Flag Officer Commanding, Western Fleet, was the Operational Commander of all Indian Naval forces in the Western Sector. He was responsible for the Defence of Western Coast and for the conduct of offensive operations against Pakistan's Naval forces at Sea. He guided the Naval operations in his theatre of war with exemplary skill and determination and displayed an offensive spirit and ingenuity of the highest order in the execution of Naval war plans. His forces gained a decisive victory over the enemy in the crucial Naval action of the war and attacked the so far impregnable defences of Karachi port causing serious damage to vital harbour installations. The officer's action confined the Pakistani Naval ships to the sanctuary of Karachi's inner harbour, giving us undisputed superiority in Pakistani waters. This denied enemy forces the much needed support from outside the country and severely restricted their ability to continue to fight. He displayed outstanding leadership and ability in the conduct of his duties as Flag Officer Commanding Western Fleet.

CAPT. (ACTING REAR ADMIRAL) SREE HARILAL SARMA : Acting Rear Admiral S. H. Sarma, Flag Officer Commanding Eastern Fleet, the operational Commander of all Indian Naval forces in the Eastern Sector, was responsible for safeguarding the whole of Eastern seaboard from enemy attacks, to ensure complete blockade of the enemy held ports in Bangla Desh. The officer conducted these operations with exemplary vigour single mindedness of purpose and meticulous, attention which resulted in a systematic disintegration and decimation of Pakistani Naval forces in the East and assured complete safety to the Indian Merchant shipping in the area. The Carrier borne forces under his command, continuously attacked heavily defended enemy ports, inland waterways and hinterland causing serious damage to vital installations and seriously impairing the enemy's ability to continue to fight. He displayed outstanding leadership and ability in the conduct of his duties as Flag Officer Commanding Eastern Fleet.

COMMODORE BISHAMBAR NATH THAPAR, I.N. : During the recent war with Pakistan Commodore Bishambar Nath Thapar, was responsible for the co-ordination of the maritime operations in the Western Naval Command and for the provision of logistic support to the fleet from the main Naval Base at Bombay and the advance Base at Okha. With his vast experience and devotion to duty in the pivotal role, he displayed a firm grip on the situation and outstanding organising ability. He rendered distinguished service of the most exceptional order.

CAPT. MOHAN SINGH GREWAL, AVSM, I.N. : The task allotted to the Eastern Naval Command during the war called for the optimum and most economic use of the units assigned. With his foresight, imagination, sound pro-

professional knowledge and judgement, **Capt. Grewal** was instrumental in the Command achieving success of a high order. By his devotion to duty and personal example in the pivotal role, he provided inspiring leadership to his staff to meet the ever-changing situation. By his conduct and devotion to duty and professional competence he rendered distinguished service of the most exceptional order.

REAR ADMIRAL BANSI RAJ SINGH, PVSM, (BAR TO PARAM VISHISHT SEVA MEDAL): Rear Admiral Bansi Raj Singh, was primarily responsible for organising and directing the repair and logistic facilities for the ships of the Western Naval Command. On the declaration of emergency, his units were rapidly organised to provide docking, repair and logistic facilities round the clock. Prior to and during the hostilities, extensive maintenance and repairs were carried out on some ships in a very short period of time. This made a great contribution to the operational availability and efficiency of the Western Fleet. By his fore-thought and planning, he geared up his units to meet numerous exacting demands of the ships in a very short time and the ships returning from patrol were fuelled, repaired and turned round with remarkable speed and efficiency. The manner in which Rear Admiral Bansi Raj Singh organised and motivated the personnel to maximum effectiveness during the hostilities was in the best traditions of the Service. He rendered distinguished service of the most exceptional order.

COMMODORE DORAB RATANSHAW MEHTA : In the preparatory stages, well before the commencement of open hostilities with Pakistan, a very large amount of offensive war planning for the Navy was necessary. The threat of pre-emptive underwater attack by Pakistan also required detailed defensive planning for our ports, harbours and shore installations. **Commodore Dorab Ratanshaw Mehta** was charged with the responsibility for the co-ordination of the Naval war plans and also for the issue of detailed war orders to put this into effect. Time was short for completion of this task. It was the unflagging effort put in by Commodore Mehta which resulted in war plans being complete at the commencement of hostilities. During the hostilities also, he was keeping in intimate touch with the conduct of operations and giving guidance with the constantly changing situation. The thoroughness of the Naval plans and its effective implementation was, to a large extent, the result of Commodore Mehta's unstinted effort and devotion to duty. He rendered distinguished service of the most exceptional order.

COMMODORE JOHN THOMAS GOSLIN PEREIRA, AVSM : Both before and during the period of hostilities, **Commodore John Thomas Goslin Pereira** was responsible for planning and directing the technical services and base support to bring the ships and craft operating from Bombay to a very high state of material efficiency. Through his professional skill, zeal and inspiring leadership, he knitted the technical shore support into a team that produced very prompt and effective results during the hostilities. A number of alterations and

additions to increase the Fleet's mobility and fire power were executed in a short time under his directions and guidance. His professional competence, skill to improvise, initiative and dynamism were in keeping with the best traditions of the Service. He rendered distinguished service of the most exceptional order.

REAR ADMIRAL VASUDEVA ANANT KAMATH : During the hostilities with Pakistan, Admiral Kamath was made responsible for the defence of our coastline from Goa in the North to Pamban in the South. Despite limited resources allotted to his Command, he conducted Naval operations at sea with such a good effect that no reinforcements from West Pakistan were able to reach East Pakistan by the route passing South of Ceylon. These operations played a significant role in bringing about the surrender of hostile forces in East Pakistan. In addition, his forces were called upon to intercept and capture Pakistan merchant shipping passing through his area. Admiral Kamath mobilised all the reserve for the repair, overhaul and servicing of Naval aircraft to peak efficiency. It was through his dynamic leadership, drive and determination that the maximum number of Naval aircraft were made available for operations, not only in INS VIKRANT, but for the several Naval air detachments, which were operated along our coast from Okha to Calcutta. He displayed drive and determination in the conduct of Naval operations and devotion to duty of an exceptionally high order.

For all your Requirements



BALL ROLLER & TAPERED ROLLER BEARINGS

CONTACT :

Bearing Sales Corporation

377, VITHALBHAI PATEL ROAD,
BOMBYA-4

Telegram : **BANKTHRU**
Phone : **351840**

AUTHORISED STOCKISTS :

SKF, NBC, BBL & NORMA BEARINGS

Here is

A Word of Cheer

For

**Our Gallant Armed Forces
And Their Families**



**LEAD HEALTHY AND
HAPPY LIFE WITH**

LYKATONIC

FOR GOOD APPETITE AND NOURISHMENT



LYKA LABORATORIES

SUBHASH ROAD, A, VILLE PARLE (EAST)

Phone : 575521-2-3
Grams : LYKAPENA
BOMBAY-57

BOMBAY-57 TELEX
011-3345

MANUFACTURERS OF : PHARMACEUTICALS

AIR FORCE

AIR COMMODORE RANDHIR SINGH, AVSM, VR. C. (2135) F (P) : During the recent Indo-Pak hostilities Air Commodore Randhir Singh was in command of a forward base in the Western Sector. He planned the defence of his base so meticulously that the enemy's Air Force was unable to attack it in any manner. As the operations progressed, he, not only frustrated the enemy's evil designs by capturing some of the agents, but was able to organise the supporting services on the base so well that all through the operations the squadrons could provide the desired number of close support and offensive sorties with utmost effectiveness inspite of the stiff enemy opposition. His untiring zeal and outstanding leadership was an example to all personnel during the difficult days of the conflict. His overall contribution towards the air operations in the Western Sector was most commendable. He rendered distinguished services of the most exceptional order.

GROUP CAPTAIN MALCOLM SHIRLEY DUNDAS WOLLEN, VM (3641) F(P) : Group Captain Wollen, was the Commanding Officer of a major Air Force base in Assam. On the outbreak of hostilities with Pakistan in Dec. 1971, he was placed in operational control of two MiG-21 Squadrons at a forward airfield. The task of these Squadrons was to neutralise the Pakistani Air Force in Bangla Desh and to give close support to the Army in that area. From time to time, certain special tasks were also ordered. The sum of all these tasks was very large in relation to the forces under his control. It was a measure of his organisational ability and leadership that every one of the objectives was fulfilled. The special tasks given to him included such missions as the destruction of certain selected buildings occupied by the West Pakistani forces and their Governor in Dacca city, the elimination of radio transmitting stations and the day and night bombing of certain air-fields in enemy hands. Group Captain Wollen planned, organised and conducted these operations personally, and himself gave the briefings on the tactics which the aircraft were to adopt. There was never any occasion, by day or by night, when there was any hesitation in immediately getting down to the execution of tasks given to him. The success of these operations contributed directly to the neutralisation of Pakistani air strength in Bangla Desh, support of our own surface forces, and the eventual surrender of the Pakistani forces in that Sector. With his brilliant leadership, organisational ability, initiative and zeal, and the devotion to duty manifest in his outstanding career, Group Captain Wollen rendered distinguished service of the most exceptional order.

AIR MARSHAL HIRENDRA NATH CHATTERJEE, DFC, (1620) F(P) Since March 1971 Air Marshal Hirendra Nath Chatterjee was responsible for the operational training and readiness of the Air Force as a whole. He played a leading part in planning and co-ordinating the activities of the three Operational Commands during the recent war with Pakistan. Throughout his career, Air Marshal Chatterjee brought to his duties a sound knowledge of military aviation in all its aspects, and the ability to tackle the most difficult tasks in a quiet and methodical manner. Through the many important posts that he held, he did much for the development and strengthening of the Indian Air Force, leading up to its success in the recent Indo-Pak conflict. He rendered service of the most exceptional order.

GROUP CAPTAIN PETER MAYNARD WILSON, Vr. C. (3590) F (P) : Group Capt. Wilson was in Command of an Armament Training Wing. He organised the station so that, on the outbreak of the 1971 hostilities, the Wing was immediately transferred into a major operational base. The location of this base was such that its aircraft could strike deep into enemy country. For this reason, the Pakistani Air Force was quick to mount raids against the base. Due to the deception plans laid by Group Capt. Wilson, the enemy bombed non-existent targets, and caused hardly any damage to the base itself, which remained fully operational throughout the war. His air defence measures resulted in the shooting down of an F-104 aircraft during a daylight raid that the enemy made on the base. With the support provided by the base, fighter aircraft stationed there were able to launch strikes against targets deep in enemy territory, inflicting severe damage and depleting his ability to wage war against India. These raids were conceived and planned by Group Capt. Wilson, with such success that, despite the presence of enemy fighter and anti-aircraft defence, they were carried out without losses to our own forces. In spite of the exposed location of the base, throughout the war, Group Capt. Wilson maintained a calm and collected demeanour, which percolated throughout the Station, inspiring aircrew and ground personnel alike to great efforts and achievements. In his outstanding career, with his leadership, drive, determination and implacable will, Group Capt. Wilson rendered distinguished services of the most exceptional order.

GROUP CAPTAIN CHANDRA KANT VISWANATH GOLE, AVSM, (3652) F (P) : In the conflict with Pakistan, Group Captain Gole was the Station Commander of a forward base. With complete disregard to personal safety and with unflagging zeal, he successfully directed the air defence operations in the Punjab Sector. His base was subjected to repeated enemy air raids. On one occasion, he narrowly escaped death when a time bomb exploded very close to him, killing two. Unmindful of the incident, and even though he suffered a temporary deafness, as a result of this, he exhibited great leadership and zeal, which enabled him to meet fully the entire needs of the operational squadrons based at his station. In the discharge of his functions as a Commander, he inspired his men by his outstanding courage, selfless devotion to duty and qualities of fine leadership. The high morale, with which he imbued the aircrew and the ground personnel of his station, was a major contribution to the success of air operations. As a leader of men and an administrator and organiser of high ability, Group Capt. Gole rendered distinguished service of the most exceptional order.

AIR VICE MARSHAL MAURICE BARKER (1691) F (P) : During the recent Indo-Pakistan war, Air Vice Marshal Barker's Command was responsible for all bomber, transport and maritime operations. Despite having been in the Command for a relatively short period of time, Air Vice Marshal Barker was able to organise his forces and control them most effectively. Under his guidance, the bomber force kept up a continuous series of attacks by night on strategic targets deep in enemy territory, both in East and West Pakistan. Later, with the neutralisation of the Pakistan Air Force in the East, his bombers played an important role in supporting our land forces by day in that area. The bombers were also used to very good effect against targets in support of the Army along the Western border. On the transport side, Air Vice Marshal Barker collaborated with Eastern Air Command to enable the latter to launch a very successful airborne operation in

East Pakistan. The speed and efficiency with which the operation was mounted, and the good results achieved by it, testify to the high quality of planning and staff work that was put into it by Air Vice Marshal Barker and his staff. Likewise, valuable air support was given by the units under his control to the Navy in the Bay of Bengal and the Arabian Sea. In undertaking the numerous and vital tasks of his Command, Air Vice Marshal Barker displayed a ready understanding of operational plans and problems, and organising ability and determination in dealing with them. His tact and personal leadership contributed much to the success of his Command's operations. He rendered distinguished service of the most exceptional order.

AIR VICE MARSHAL SATYA PAL SHAHI, (1601) ADM : Prior to, and during the December, 1971 conflict with Pakistan, Air Vice Marshal Satya Pal Shahi had to bear very heavy administrative responsibilities, which he had discharged most successfully. Operational plans required the setting up of additional facilities at a number of forward airfields, and there was a requirement for large increases in manpower at all operational stations. His judicious allocation of the additional manpower, made available to his Command, ensured that all operational units had the personnel they needed to fulfil their tasks. He also took steps to ensure that the organisational set up by Air Headquarters for emergency repairs of airfields would function smoothly at all the Wings within the Command. In the event, his efforts enabled airfields damaged by enemy action during night raids to be made fit for use by surprise the following morning. The close liaison he established with State Governments to ensure unbroken power supply to operational bases, and augmentation as security arrangements proved most effective. During the hostilities, he personally visited every forward airfield and outlying unit to ensure the smooth running of the administrative machinery parallel with the conduct of operations. This effort on his part had a significant effect on the morale of personnel and their families. In sum, the administrative arrangements for which he worked so hard and efficiently had a direct contributory effect on the success of air operations. With his high professional competence, dedication to duty, zeal and enthusiasm, Air Vice Marshal Shahi rendered distinguished service of a most exceptional order.

AIR VICE MARSHAL CHARANDAS GURUDAS DEVASHER, (1867) F (P) : Air Vice Marshal Devasher took over his appointment at a time when the Command itself was undergoing a process of reorganisation and the relations with Pakistan were becoming strained. He was responsible for reformulating the Command's war plans, making them bold in concept, yet simple to execute. These plans were put into action on the morning of 4th December 1971 when our Armed Force went into action to liberate Bangla Desh. So effective were the plans that, within a few hours, the Indian Air Force had achieved total supremacy in the skies of Bangla Desh. During the period of the war in Bangla Desh, from 4th to 16th December, 1971, he controlled and co-ordinated all air activity in that sector, including para, transport and helicopter operations. The success of these operations owed much to his aggressive spirit, knowledge of the use of air power and ability to change tactics to suit the situation. On the night of 11th December, 1971, on receipt of an intercepted enemy message, he concluded that the Pakistanis had been able to build an emergency air strip in the neighbourhood of Dacca, and would attempt to land transport aircraft on it. Accordingly, he ordered night

patrols by fighter aircraft over Dacca. As deduced by him, an emergency air strip was spotted at Narsingdi and put out of action, thus preventing the clandestine entry and exit of war material and personnel from Bangla Desh by air. Throughout his career in the Air Force, and especially during the recent war with Pakistan, Air Vice Marshal Devasher rendered distinguished service of the most exceptional order.

AIR COMMODORE JOHN FRANCIS LAZARO, VM (2944) F (P) : In December 1971, at the time of the Indo-Pak conflict, Air Commodore Lazaro was primarily responsible for joint planning and execution of army-air operations in the Western Sector. Under his able leadership, air operations in aid of the army achieved a new dimension. Close air support was given most effectively and the enemy's lines of communications were perpetually disrupted, isolating his forward troops. Enemy ammunition and fuel dumps were also blown up successfully, and many of his Headquarters locations destroyed. All this was done with speed and determination, despite intense enemy opposition. The officer displayed superior leadership and carried out planning of the most exceptional order.

AIR VICE MARSHAL DEVIAH SUBIA, Vr. C : Air Vice Marshal Subia took over his appointment only a few months prior to the outbreak of hostilities. He made a thorough study of the requirements of air operations in the Western Sector, paying full attention to the minutest detail of each aspect of air operations. He personally studied and analysed all operational procedure and ensured that there was no ambiguity in these instructions and that they were fully understood by all concerned. He worked for long hours to ensure that Squadrons/Units were deployed as planned with maximum economy of effort and minimum inconvenience to the personnel involved. He planned the moves in such a manner that at all stages the Squadrons retained their full operational capability to counter-act any pre-emptive strike by the enemy. He displayed remarkable organising ability in establishing within a very short period, a chain of observation posts around our forward airfields for reporting low flying aircraft. Throughout the period of hostilities, he carefully co-ordinated all aspects of operations, especially the strike missions at night. These operations involved strike forces from another Command. It was primarily due to his careful planning and foresight that all missions were successfully completed without any mishaps. His cheerful disposition and self-confidence were inspiration to his staff at the Headquarters and to Commanders in the field. Through out his career, in peace and in war, Air Vice Marshal Subia rendered distinguished service of the most exceptional order.

WITH OUR GREETINGS TO

ALL AWARD WINNERS

ADAMJI LOOKMANJI & CO.

RAHIMTOOLA HOUSE HOMJI STREET
BOMBAY 2,

Phone:- 265946 - 269860 - 269871

BORDER SECURITY FORCE

SHRI GOLAK MAJUMDAR, IG BSF : Shri Golak Majumdar was the Inspector General of the Border Security Force, West Bengal. Both before and during the recent operations, he worked with exceptional zeal and dedication and extended willing co-operation in carrying out the duties assigned to the Border Security Force in this theatre. He not only ensured that all BSF serving in West Bengal worked in close co-operation with the Army units but by his sustained hard work and dedication to the cause produced very good results even in areas where the entire burden of operations fell upon the Border Security Force. Throughout this period, Shri Golak Majumdar showed extraordinary capacity for work and by his indefatigable zeal and devotion to duty rendered distinguished service of an exceptional order.

ATI VISHSHT SEVA MEDAL

Citations not available at the Time of going to the Press :

Brig. Chhajju Ram, Vr. C, (IC-1351), Artillery, Brig. IC Adm, HQ. Eastern Command; Brig. Adi Meherji Sethna, (IC-522), Raj Rif, BGS, HQ. Eastern Command; Brig. Avtar Singh Mann (IC-1168), Artillery, Comdr, 332 (Indep) AD Bde; Brig. Gurjit Singh Randhawa (IC-6066), Sikh, Comdr, 330 Inf. Bde; Brig. Vijay Kumar Vinayak Bhide (IC-840), Engineers, CE, HQ Eastern Command; Brig. Krishen Kumar Tewari (IC-520), Signals, CS, (HQ Eastern Command; Brig. Jagbir Singh Nanda (IC-2925), Signals, CSO, Hq 1 Corps; Brig. Mangapura Chandra Sekharan Menon (IC-4713), Guards, Comdr, 48 Inf Bde; Brig. Shamindra Nath Sen (IC-555), (Artillery, B Atty, HQ Western Command; Brig. Chander Vishindas Advaney (IC-2581), Artillery, B. Arty, HQ Eastern Command; Col. Mehtab Singh Khara (IC-3975), Intelligence Corps, Col. Int. HQ. Eastern Command; Col. Prakash Mohan Pasricha (IC-4719), Intelligence Corps, Col. Int. HQ. Western Command (All Army); Air Cdre Jafar Zaheer (3173) F (P); Group Capt Emanuel Fernandes (3577) F (P); Wing Comdr Vishwanatha Krishnamurthy, VM, (4022) F (P); Wing Comdr Mohinder Singh Bawa, VM, (4494) F (P); (All Air Force); Brig. Shamsher Singh Malhotra (IC-929), Infantry; Brig. Brij Mohan Bali (IC-1454), Infantry; Brig. Harbans Singh Chopra (IC-1289), ASC; Brig. Bhupal Singh Chand (IC-905), Vr. C, Infantry; Brig. Birendra Kumar Bhattacharya (IC-5699), VSM, Infantry; Brig. Pribhoo Moolchand Bhatia (IC-4642), Engineers; Brig. Sachindra Nath Mukerji (MR-195), AMC; Brig. Om Prakash Vohra (IC-2588), Intelligence Corps; Brig. Bikram Chand (IC-995), Artillery; Brig. Darshan Singh (IC-2064) ASC; Col. Gururaj Krishnarao Burli (IC-2717), Artillery (All Army); Captain Francis Leslie Fraser; Captain Bhalchandra Ganesh Mudholkar; Captain Rajendra Pall Khanna (All Navy); Gp. Capt. Kanwar Iqbal Singh Chhabra (3831) F (P); Gp. Capt. Prem Pal Singh, MVC, (3871), F (P); Wg. Cdr. Vishwanath Balkrishna Sawardekar, KC, (4593) F (P); Wg. Cdr Upkar Singh (4658) F (P) (All Air Force), Brig. Manohar Singh (IC-987), Artillery; Brig. Madan Mohan Singh Bakshi, MVC (IC-1697), Armed Corps; Brig. Hari Daya Kaul (IC-3941), Armd Corps; Brig. Mohinder Singh (IC-4005), Madras; Brig. Sardari Lal Juneja (IC-1888), Signals; Brig. Edathil Ambbalavattan Rammohan, VSM, (IC-671), Madras; Brig. Kartar Singh Kataria (IC-3593), Kumaon; Brig. Madan Mohan Lal Chhabra (IC-3915), EME; Brig.

Harbhajan Singh Kullar (IC-1549), Punjab ; Col. Bhupindar Singh (IC-2752), Artillery, (All Army); Air Cdre. Gian Dev Sharma (1742) F (P) ; Air Cdre Surinder Singh (3009) F (P) ; Gp. Capt. Amrit Dev Datt (3789) AE (M) ; Wg. Cdr. Shiv Prakash Sabharwal (4413) F (P) ; Wg. Cdr. Krishan Kumar Badhwar (4669) F (P) ; Wg. Cdr. Donald Belvyn Conquest (4692) F (P) ; Wg Cdr Navin Chandra Bharmar (3731), ADM, (All Air Force) ; Brig. Prem Singh (IC-10679) JAK Rif ; Col. Harbans Singh Bains, MC, (MR-515), AMC (All Army); Commodore Erach Jamshed Debu ; Capt. Arakal Narayana Parameshwaran Pillai ; Capt. Narendra Bhalla (All Navy) ; Air Cdre Harcharan Singh Bakshi, (2083) ADM ; Air Cdre Gorindra Kumar Singha, (2361) AE (M) ; Gp. Capt. Gurdial Singh Punia, (2134) ADM ; Gp. Capt. Aubrey Leslie Michael, (3416) F (P) ; Gp. Capt. Ramesh Chander Jain, (3546) AE(L) ; Wg. Cdr. Kailash Chandra Khanna, VM, (4722) F (P); Gp. Capt. Sivaramannair Kesavan Nair, (3803) AE(M), (All Air Force) Brig. Avtar Singh (IC-2438), Artillery ; Brig. Reginald Owen Kharbanda (IC-4689), 3 GR ; Brig. Kuldeep Singh Chadha, (IC-1195), Bihar ; Brig. Archibald Ernest Joseph, (IC-4054), Kumaon ; Brig. Ujjagar Singh (IC-1664), Garhwal ; Col William Gordon Mc Koan (IC-774), Artillery ; Col. Adarsh Rattan (IC-4007), Engineers, (All Army); Commodore Thomas Jacob Kunnenkeril ; Ag. Capt. Santosh Kumar Sinha ; Ag. Captain Patrick James Barron ; Codr. Nellari Poozankandi Mukundan ; Lt. Cdr. Ninan Geevarghese, (All Navy) ; Air Cdre Bawa Sampuram Singh Bedi (1795) AE(M) ; Air Cdre Amrit Lal Saigal (3608) AE (M) ; Wg. Cdr. Kasi Gopala Radhakrishnan (4956) AE (M) ; (All Air Force) ; Capt. Oscar Stanely Dawson, IN ; Capt. Mehru Kumar Roy, IN ; Capt. Jai Paul Syal, IN, (All Navy) ; Brig. Uttam Singh Sidhu, (MR-253), AMC ; Col. Swaroop Nath Wanchoo, (MR-324), AMC ; Col. Balwant Singh, (MR-459), AMC ; Col. Bishambhar Pratap Rikhye, (IC-9716), Pioneers ; Col. Karam Singh, (IC-1344) AOC ; Col. (Miss) Hazel Inez Woolger, (N-1337), MNS, (All Army) ; Air Cdre Chandrakant Shridhar Naik, VSM, (3499), AE (M) ; Gp. Capt. Mohan Badami, (3888), F (P) ; (All Air Force) ; Brig. Kizhakkathil Prasad Chandran Nair, (IC-1431), ASC ; Brig. Om Prakash Vig, (IC-3542), ASC ; Brig. Ram Chandra Vinayak Apte, (IC-1909), Artillery ; Brig. Pran Nath Kathpalia, (IC-4528), Kumaon ; Col. Balwant Singh, (IC-1103), Madras, (All Army) ; Cdre Garnet Milton Shea, AVSM, (Bar to Ati Vishisht Seva Medal) ; Comdr. Vivian Erie Charles Barboza, AVSM, (Bar to Ati Vishisht Seva Medal) ; Comdre Gautam Singh ; Comdre Inder Kumar Malothra ; Capt. Catangolathur Srinivasagopal ; Capt. Kumaran Ramabhadra Menon, VSM ; Capt. Rash Behari Mukherjee, (All Navy) ; Air Cdre Krishna Mohan Ram, AVSM (3101), F (P), (Bar to Ati Vishisht Seva Medal) ; Air Cdre Solemon Purshotam (1928) F (P) ; Air Cdre Kanvar Singh (2781) F (P) ; Air Cdre Trilochan Singh Brar (2884) F (P) ; (All Air Force).

WITH BEST COMPLIMENTS FROM :

Phone : 355949/350025

PRAKASH AUTO INDUSTRIES

Manufacturers & Representatives of: **P. V. C. SLEEVINGS, TUBINGS, POLYTHENE BAGS, ROLLS, & MOTOR ACCESSORIES.**

KOTHARI MANSION, PAREKH STREET, OPP. HARKISHANDAS HOSPITAL, BOMBAY 4.

—VISHISHT SEVA MEDAL—

Lt. Col. Manmohan Lal Khanna, (TA-41081), OC Rly. Engrs. (TA) ; Lt. Col. Kailash Chandra Kalley (IC-6706), OC, 10 Sikh ; Lt. Col. Som Dutt Mehta (IC-10087), OC, 2 Mahar ; Lt. Col. Harold Walter Saldanha, (IC-5198), Artillery, OC, 27 AD Regt ; Lt. Col. Ashok Kumar Chatterjee (IC-6008) Sikh LI, GSO 1 (Ops), HQ. Eastern Command ; Lt. Col. Parkash Chander Bhalla (IC-5394), Signals, ADSI, Eastern Zone ; Lt. Col. Dwarka Das Batra (IC-6105), Artillery, OC, 4 Fd. Regt ; Lt. Col. Anant Dattatraya Mohoni (IC-1730), AOC, ADOS, HQ. Western Command ; Lt. Col. Rajinder Singh (IC-5302), Artillery, GSO 1 (Ops), Hq. Western Command ; Lt. Col. Tojindar Singh Pall (IC-5877), OC 3 Kumaon ; Lt. Col. Narayana Sankaran Nair, (IC-7334), OC, 1/11 GR ; Maj. Sri Ram Prothi (IC-12003), Artillery, Bty, Comdr, 27 AD Regt, (All Army) ; Junior Mathew, AA III, No. 51173 ; M.C. Vasandan, MCPO II (Tel) No. 33805 ; Chandan Singh Matiyani, MCERA II, No. 49640, (All Navy) ; Sqn. Ldr. Gurbakhsh Rai Sahni, (5457) F (N) ; 26591 M.W.O. Amar Singh, Fit. I ; 218640 ; Sgt K. Gangadharan, B & W ; 226893 Cpl. M. Padmanathan, Elect. I, (All Air Force) ; Lt. Col. Digvijay Singh Jamwal, (IC-5307), 45 Cav ; Lt. Col. Eottuvillayil Oomen George (IC-6057), Artillery ; Lt. Col. Ashutosh Kumar (IC-5327), Signals ; Lt. Col. Krishen Kumar Vohra (IC-9647), Artillery ; Lt. Col. Tarun Kumar Ray, (IC-1126), AOC ; Lt. Col. Rajkumar Chopra (MR-789), AMC ; Lt. Col. Rai Singh, (IC-5086), MVC, Infantry ; Lt. Col. Adi Jamshedji Minocher Homji (IC-6905) Artillery ; Lt. Col. Cheruvallil George Varghese (IC-6024), Intelligence Corps ; Maj. Manohar Lal Bhandari (IC-6670), Intelligence Corps ; Maj. Joginder Singh Bedi (TA-40506), 123 Infantry Bn (TA) ; Capt. Suresh Behari Mathur (IC-20636), Signals ; Capt. Puthenveetil Joseph Antony (IC-22746), Signals ; Capt. Balbir Singh (MR-1962), AMC ; Capt. (Miss) Kasturibai Thanichery Kumaran (NT-13259), MNS ; JC-55594 Nb. Sub. Makhan Singh Bal, AMC ; 6309693 L/Nk Hari Chand, Signals, (All Army) ; Cdr. Madhav Vishnu Agrkar ; Cdr. Mankeshwar Singh Batra ; Cdr. Naval Rustomji Khambatta ; Lt. Cdr. Madan Mohan Kali ; Lt. Parmod Chander Bhasin ; Tarak Nath Chakravarty, SCPO, No. 64516 ; Om Prakash, PO (AF), No. 66083 ; Ajit Singh, PO (AH), No. 48905, (All Navy) ; Wg. Cdr. Om Parakash Kukreja (4394) F (N) ; Flt. Lt. Clarence Ferdinand Noronha (9601) AE (M) ; 22078 MWO Ram Naresh ; Misra, Fit. Armr ; 229457 Sgt. Esakere Chelliah, Elect. I ; (All Air Force) ; Lt. Col. Purnendra Mohan Mukherji (IC-6563) EME ; Lt. Col. Ashok Gilani (IC-6731) Artillery ; Lt. Col. Raghavendra Kumar Singh (IC-6603) Engineers ; Lt. Col. Prasanta Kumar Ray, (MR-797) AMC ; Lt. Col. Mahendra Singh Gosain (IC-6610), Engineers ; Lt. Col. Sambasivan Chandran (IC-5334) Engineers ; Lt. Col. Chandra Kumar Kichlu (IC-4360) AOC ; Lt. Col. Jaswant Singh Mann (IC-6544), EME ; Maj. Hemendra Kishore Bhattacharjee (IC-31124), ASC. (postal) ; Maj. Sudhansu Kumar Chattopadhyay (MR-2077) AMC ; Maj. Sushil Jagota (IC-6678), EME ; Maj. Prahlad Bhagat (IC-10287), Artillery ; Capt. Inder Mohan (IC-14611) Dogra ; Lt. Teja Singh (SL-1791), Asstt. Garrison Engr ; JC-12135 Sub. Maj. Inayat Ali Khan, 4 Grenadiers ; JC-19738 Sub. Bishan Singh, 237 Army Engr Regt ; JC-45443 Nb Sub Ranjit Singh, Artillery, (All Army) ; Cdr. Jagjit Singh Pantle ; Cdr. Viswanath Ravinderanath NM ; Lt. Cdr. (SDC) Punakkattuchery Alphonse Jose Berso ; Lt. Cdr. Gopal Dass Mukerji NM ; Lt Samir Das, NM (posthumous) ; Gurmail Singh, CPO CD I No. 64546, (All Navy) ; Wg. Cdr. Kalpathy Easwaran (3725), LGS ; Wg. Cdr.

Vankataraman Srinivas Iyer (4330) F (N); Sqn. Ldr. Bhuban Mohan Gogoi (7454) Med; Flt. Lt. Kirpal Singh Dhillon (10360), AE (M); 100917 Flt. Sgt. Ranjit Kumar Dutta, Fit. Armr.; 202521 Flt. Sgt. Shivinder Suri, F. M. T.; 223025 Sgt. Suhaschandra Khanderao Gupta, F. II. E, (All Air Force); Cdt. Mohan Lal Kalia, 12 Bn. BSF (Border Security Force); Lt. Col. Surinderpal Singh Sidhu (IC-5129), Punjab; Lt. Col. Sukhamoy Muzumdar (IC-5821), Engineers; Lt. Col. Chandra Mohan Gupta (IC-4799), Artillery; Lt. Col. Murari Swamimali Krishnamurthy (IC-4091), ASC; Lt. Col. Errabelli Murlidhar Rao, (IC-7262), Bihar; Lt. Col. Arjun Verma (IC-7600), Singals; Lt. Col. Rajendra Prakash (IC-5135), Artillery; Lt. Col. Basant Ballabh Upreti (IC-6249), Sikh; Lt. Col. Vijay Kumar Madhok (IC-6132), 3 GR; Lt. Col. Vinod Badhwar (IC-6701), 5 GR; Maj Chander Mandwani (IC-13726) ASC; JC-60254 Nb Sub. Puran Chand Awasthi, Signals, (All Army); Cdr. Srinivasa Krishna Moorthy; Lt. Cdr. Puthucode Variath Damodaran; Lt. Cdr. Dhanajay Shahane; Lt. (SDC) Matthathil Narayan Raghavan; Lt. (SDME) Madhan Lal; Harish Chandra Pandey, PO (Tel) No. 65378; Sukamaran George, PO (Tel) No. 49667, (All Navy); Wg. Cdr. Shanker Govind Chitnis (3763) LGS; Wg. Cdr. Paul Louzade (4153) AE (M); Wg. Cdr. Parshotam Lal Rishi (4555) AE (L); Wg Cdr Appakudal Jayaraman Srinivasan (4933) AE (M); Sqn. Ldr. Lakshmir Singh (4941) AE (L); Sqn. Ldr. Kailash Chander Kapoor (5409) AE (L); Flt. Lt. Adhiyur Raju Maniam (9931) AE (L); Flt. Lt. Ponmalarikoreth Kunhikannan Nambiar (6896) AE (M); Flt. Lt. Mangat Singh (7845) AE (M); Fg. Offr Suresh Khanna (10861) AE (L); Fg Offr. Ranjan Bhattacharya (11688), ADM; Fg Offr Chandra Shankara Narayanan (11737) AE (L); 208052 Flt Sgt Mannettu Varky Philipose, C & SMW; 212572 Flt Sgt Devi Sharn Sharma, C & SMW; 219440 Flt Sgt Ramdas Ganpathrao, JODH Elect. I; 229509 Cpl. Surinder Mohan Chibber, F. II. A., (All Air Force); Lt. Col. Salil Chandra Ghosh (MR-733), AMC; Lt. Col. Om Prakash Grover (IC-7076), Engineers; Lt. Co. Suraj Prakash Malik (IC-10868), Signals; Lt. Col. Francis Regis Campos (IC-5566), Madras; Maj. Narendra Kumar Singh (IC-9916), Bihar; Maj. Kapil Mohan (TA-40732); Maj. Surinder Kumar (IC-12865), Engineers, (All Army); Cdr. Jalgam Ram Rao; Cdr. Gulab Chattaram Thadani; Cdr. Ranjikan Keshavarao Deshpande; Cdr. Madhukar Prahlad Ballal; Lt. Cdr. Suresh Bhandoola; Surgeon Lt. Dilip Kumar Bose; Lt. (SDC) Mark D'Souza; Amin Chand Chauhan, PO (CD I), No. 46196, (All Navy); Wg. Cdr. Pommaraju Kamraju, VSM, (4533) AE (M), (Bar to Vishisht Seva Medal); Wg. Cdr. Cheeren Verghese Thambi (4143) AE (L); Wg. Cdr. Nayel Devarao Mohan, (4937) AE (M); Sqn Ldr. Surinder Mohan (4939) AE (L); Sqn Ldr. Dilip Kumar Chatterjee (5961) AE (L); Sqn Ldr. Prabhakar Baburao Magdum, (6549) AE (M); Sqn. Ldr. Baljit Singh Sahwey, (6558) AE (M); Sqn Ldr Vir Sen Choudhry, (7426) AE (M); Flt Lt. Hardeep Singh Beparai, (6807) AE (M); Flt. Lt. Narinder Kumar Chibber, (7086) AE (L); Flt. Lt. Gian Prakash Sharma, (8864) AE (M); 14210 MWO Phanindra Mohan Sen, Fit. I; 200052 WO Darbara Singh, Fit. I; 201461 WO Manmohan Singh Sodhi, Fit. I; 37313 WO Ishwar Singh, FMT; 202976 Flt Sgt. Rattan Lal Mehta, Elect. I; 208020 Flt Sgt. Bireswar Mukherjee, Fit/Armr; 236986 Sgt. Babu Rao, RAD/MECH; 249326 Cpl (A Sgt/UP) Shankar Nath Kundu, Elect I; 216416 Cpl. Ram Kishore Gupta, AFSO 6; 241066 Cpl Kishan Chand Malhotra, Med/Asst, (All Air Force); Lt. Col. Krishan Nanikaram Thadani (IC-6641), Artillery; Lt. Col. Ravinder Datt Dhawan (IC-6807) 12 Raj Rif; Lt. Col. Jagdamba Prasad Thapliyal (IC-6691), Engineers; Capt. Bommasani

Pandu Rangarao (MR-1935), AMC ; (All Army) ; Cdr. Narayan Rajagopal ; Cdr. Shriniwas Wamanrao Lakhkar, NM ; Lt. Cdr. Mehar Singh ; Lt. Cdr. Partha Pritim Nadi ; Lt. (SDC) Mohan Singh, (All Navy) ; Wg Cdr. Ved Prakash Bhagra (2113), ADM ; Wg. Cdr. Rattan Singh Dhindsa (2541), ADM ; Wg. Cdr. Prasanta Kumar Chaudhuri (3676), ADM ; Wg. Cdr. Manjeet Singh Judge (3709), LGS ; Wg. Cdr. Chander Parkash Aggarwal (4190), LGS ; Wg.Cdr., Har Mohan Singh Chatwal, VM (4198) F (P) ; Wg. Cdr. Vinayak Bhiwaji Sawant Vr. C. (4401) F (N) ; Sqn. Ldr. Zacheer Ahmed Ansari (5429) AE (M) ; Sqn. Ldr. Srinivasa Rengaswamy (5638) Adm ; Sqn Ldr. Sardari Lal Gupta (5728) LGS ; Maj Jagdish Raj Sethi (IC-10483), Signals ; Flt. Lt. Subir Kumar Niyogi (7881) AE (M) ; Flt. Lt. Hitendra Singh Chimni (8543) ADM ; Fg. Offr. Vinod Chandra Tripathy (11678) ADM, (All Air Force) ; Lt. Col. Krisan Lal Vasudeva (IC-7203), Artillery (Special Frontier Force) ; Lt. Col. Narayana Sarma Parameshwara Iyer (IC-1127) AOC ; Lt. Col. Harjit Singh Sidhu, (IC-4809), Dogra ; Lt. Col. Mohinder Singh Chehal, (IC-5091), Artillery ; Lt. Col. Madan Vijay, (IC-7057), 4 GR ; Lt. Col. Venkataraman Subramaniam, (MR-693), AMC ; Lt. Col. Gundavaram Madhava Rao, (IC-7379), Maratha LI ; Lt. Col. Rani Singh Dagar, (IC-7350), 1 Para ; Lt. Col. Sham Lal Tugnait, (IC-4198), Arty ; Lt. Col. Mahendra Singh, (MR-358), AMC ; Lt. Col. Harish Chandra Puri, (MR-544), AMC ; Maj. Alagala Christopher Babu Rao, (M-30802), AMC ; Maj. Laljit Chander Idnani, (IC-15030), Engrs ; Capt. (Miss) Prabhavati Dattatraya Panse, (NT-12993), MNS, (All Army) ; Cdr. Chintalapati Surya Narayana Raju ; Lt. Cdr. Bal Subramanian ; Lt. Cdr. Teck Sharma ; Lt. (SDAE) Pran Nath Puri ; V. B. Pathak MCPO II (AOF) No. 46284 ; R. K. Dinesan YS No. 49495 ; N. Singh AA III No. 51233, (All Navy) ; Wg. Cdr. Shashi Kumar Samuel Ramdas, VM (4930), AE (M). (Air Force) ; Asstt. Comdt. Debidas Chatterji, 72 Bn BSF (BSF) ; Lt. Col. Raminder Pal Singh, (IC-6503), 7 Para, (posthumous) ; Lt. Col. Kuppa Venkata Subrahmanyam, (MR-714), AMC ; Lt. Col. Ian Indrajit Sahgal, (IC-9137), ASC ; Lt. Col. Jagdish Sahai Makker, (IC-7716), Engineers ; Maj Santosh Gopal Mookerjee, (IC-7017), Signals ; Capt. Sohan Singh Bisht, (IC-15189), AOC, (All Army) ; Cdr. Amrik Singh, MN ; Cdr. Sureshwar Dhari Sinha ; Cdr. Arun Rao ; Cdr. Krishna Chandra Gairola ; Cdr. Joseph Anthony Fernandes ; Lt. Cdr. Kandaswamy Chelliah (I. N. R.) ; Lt. Cdr. (SDME) James Soares, (All Navy) ; Sqn Ldr. Prem Prakash Agrawal (4852), EDN ; Fg. Offr. Gurjant Singh (11526) AE (L) ; 10277 MWO Jaywant Singh Ray, Fit. 1 ; 266036 Cpl. Brij Pal Singh, Wom. II, (All Air Force) ; Lt. Col. Laxman Balwant Kane, (IC-1317), Maratha, 2 Bn BSF (BSF) ; Lt. Col. Mahavir Singh, (IC-5661), Grenadiers ; Lt. Col. Chaman Lal Ghei (IC-7079), Grenadiers ; Lt. Col. Gopal Krishan Soni (MR-1162), AMC ; Lt. Col. Mohindar Singh, (IC-4291) (Re-employed) ; Lt. Col. Rathnaswamy Mahimai Rajan (IC-2301), Signals ; Lt. Col. Bhuminder Parkash Murgai (IC-6127), Signals ; Lt. Col. Dakinedi Satuanarayana Rao, (IC-7176), ASC ; Lt. Co. Amarjit Kalkat (IC-7347), Gurkha Rifles ; Maj Parmatma Chand Murli Manohar Mall Mehta, VSM, (M-30550), AMC, (Bar to Vishisht Seva Medal) ; Maj. Ramesh Chandra (M-30243), AMC ; Maj. Madan Lal Datta (IC-12435), Signals ; Maj. Umapada Chattopadhyay (MR-1841) ; Capt. Janardhnan (TA-41082), 1033 HQ. Rly Engineers (TA), (All Army) Surgeon Lt. Cdr. (Mrs) Kusum Jagmohan Sood ; Lt. Cdr. Lekendra Kumar Sharma ; Lt. (Now Lt. Cdr.) Pirthi Singh ; Lt. (SDC) Neelakanda Parameshwaran Nair ; Lt. (SDC) Yesudian Kanakaraja Paul Charles ; Sub. Lt. (SDAR) Erekaath Ramakrishnan Menon ; Urpail Puthanveetil Madhavan,

Insist on

PARSON

Transmission small parts major kit

Also ask your dealer for

OIL PUMPS, OIL PUMP ROTORS, PETROL FILTER, PETROL TANK CAPS, VALVE TAPPETS, SUPPORT ASSEMBLY, CARBURETTER BUTTERFLY, CONTROL CABLES, OIL SEALS and many other replacement parts suitable for Ambassador Car.

please write or contact :-



PIYUSH

Automobiles

519, Sardar V. P. Rd., BOMBAY-4.

TELE : OFF : 355276 □ 383138

RESI : 361892 □ 356285

Gram : 'PIYUSHAUTO'

Telephone : 38588

UNIVERSAL ENGINEERING STORES

89, Mohamedali Road, Bombay-3. BR.

Dealers of :

Precision Measuring Instruments, Metal Cutting & Hardware Tools, I/T Addition Batu SRP Twist Drills, Reamers Milling Cutters & Ground Thread Taps

M & W : Outside, Inside & Dept. Micrometers & Gauges.

BATY : Indicating Instruments for Automobile Industries.

EFEM : Die Heads and Tapping Attachments.

ECLIPSE : Magnetic Chucks, Industrial Magnets & Workshop Equipments.

MITUTOYO : Vernier Calipers, Height Gauges Micrometers

MCH (Tel) II No. 41084, (All Navy) ; Depty. Comdt. Kanwar Bhupendra Singh, 72 Bn. BSF (BSF).

—SENA MEDAL ARMY—

Maj. Kallianpur Krishanji Rao (IC-14662), 8 Guards, (posthumous) ; Maj. Ranjit Singh (IC-11504), 5 Garh Rif ; Capt. Ransher Singh Ranawat (IC-19420), 9 Guards ; 2/Lt. Dharam Vir Redhu (SS-23027), 8 Raj Rif ; JC-44886 Nb. Sub. Taratha Bhadur Gurung, 4/5 GR, (posthumous) ; 13710291 Nb. Sub Sukhdev Singh, 1 JAK Rif ; 9135822 L/Hav. Kunga Stanain, Ladakh Scouts ; 13721969 Nk. Inderjit, 1 JAK Rif (posthumous) ; 351537 Nk. Mohabat Singh, 8 Raj ; 13724328 L/Nk. Baldoo Singh, 1 JAK RIF, (Posthumous) ; 5441727 Rfn. Krishan Bahadur Thapa, 6/5 GR (FF) ; 5442945 Rfn. Hem Bahadur, 6/5 GR (FF), (Posthumous) ; 2456604 Sep. Bishan Das, 23 Punjab, (posthumous) ; 9920823 Sep. Stanzin Dorje, Ladakh Scouts, 9777987 NCE Sena Ullah, 1 J & K Militia, (posthumous), Lt. Col. Sukh Dev Khullar (IC-6743), Artillery, (posthumous) ; Lt. Col. Ashok Manglik (IC-6161), 42 Fd. Regt ; Maj. Ashok Raj Kochhar (SS-19750), 11 Guards ; Maj. Sher Singh Grewal (IC-14009), 21 Punjab ; Maj. Nariansingh Koak, (IC-14488), 2 Sikh ; Capt. Balbir Singh (SS-21116), 14 Punjab ; Capt. Purshotam Lal Bawa (IC-2093), 10 Para ; Capt. Shri Prakash Madhav Naik (MS-8393), AMC ; Capt. Harbans Singh Sandhu (SS-22335), 27 AD Regt ; 2/Lt. Krishan Kumar Sharma (IC-23294) 3 Punjab (posthumous) ; 2/Lt. Kushal Kumar Choudhary (IC-24842), 2 Sikh ; JC-54014 Nb. Sub. Sohan Singh, 10 Para ; JC-45599 Nb. Sub. Ratti Ram, 26 AD Regt ; 11077731 BHM (Gnr) Ram Pal Singh, 140 AD Regt (TA) ; 9203966 Hav. Zile Singh, 6 Mahar ; 1142645 Dfr. Raja Ram Yadav, 66 Arm Regt ; 5436057 Nk. HIM Bahadur Gurung, 5 GR ; 1215559 Nk. Mool Chand, 42 Fd. Regt ; 5438776 L/Nk. Bikram Singh Thapa, 5 GR : 1563563 L/Nk. Bua Dutta, Engineers ; 1360704 Ptr. Sultan Khan, 10 Para ; 2650442 Gdr. Harnath Singh, 11 Grenadiers ; 2444403 Sep. Surjit Singh, 9 Punjab (posthumous) ; 1519455 Spr. Ram Singh, Engineers ; Maj. Jagtar Singh Virk (IC-19923), 51 Mtn. Regt ; Maj Sheree Kumar Narayan (MR-1498), AMC ; Capt. Kailash Chandra Sharma (IC-22304), Artillery ; Capt. Babu Khan (SS-20071), 17 Grenadiers ; JC-46535 Nb/Sub. Hardial Singh, 18 Punjab ; JC-44960 Nb./Sub. Umrao Singh, 20 Rajput ; JC-41912 Nb/Sub. Anup Singh, 17 Grenadiers ; 3341235 CHM Tehal Singh, 8 Sikh, (posthumous) ; 4146924 L/Nk./Dewan Singh, 15 Kumaon ; 1168338 Nk. Thattaman Krishnan Sudhakaran 68 Fd. Regt (posthumous) ; 2647089 Nk. Kuma Ram, 2 Grenadiers ; 2848753 Nk. Risal Singh, 2 Raj Rif ; 3357783 L/Nk. Purshotam Singh, 9 Sikh ; 3385037 L/Nk. Joginder Singh, 9 Sikh ; 1167169 Gnr (ORA) Jiwa Ram, 51 Mtn. Regt ; 1295284 Gnr. (TA) Shiv Ram Yadav, 164 Fd. Regt, (posthumous) ; 4445710 Sep. Kulwant Singh, 10 Sikh LI, (posthumous) ; Capt. Praveen Kishore Johri (IC-23382), 4/5 GR, (posthumous) ; Capt. Sapru Mathews (IC-18664), 660 AOP Sqn ; Capt. Annavarapu Laxminarasimha Sharma (MR-2612), AMC ; Lt. Rayadurg Ramamurthy (SS-21456), Engineers ; 2/Lt. Narendra Singh Grewal (IC-25109), Engineers ; JC-33281 Nb/ Sub. Sardar Singh, 29 AD Regiment ; 2748787 PA/Hav. Manohar Rane, 7 Maratha, (postumous) ; 3349885 Nk. Sukhdev Singh, 4 Sikh ; 1517603 Spr. Bal Chander Misra, 102 Engr. Regt ; Capt. Madan Mohan Sharmrao Gadagkar (IC-19131), 69 Fd. Regt ; 2/Lt. Harish Chandra Mehrotra (SS-23790), Engineers ; 1158748 Hav. Hira Singh, 29 AD Regt ; 1023900 Dfr. Randhir Singh,

7 Cav ; 4338377 Nk. Jivan Ram Kachari, 5 Assam ; 1169908 Nk. Sohan Singh, 29 AD Regt ; 2449958 L/Nk. Sewa Singh, 14 Punjab, (posthumous) ; 13840800 Sep. Dvr. Raju Ram, 511 ASC Bn ; 4536542 Sep. Sukh Deo, 2 Mahar ; 4314440 Sep. Dambar Bahadur Chhetri, 5 Assam ; Maj. Suresh Yashwant Rege (IC-7306), 660 AOP Sqn ; Maj. Sushil Kumar Sekhri (IC-13019), 21 Indep Arty Bde ; Maj. Godanada Kariappa Karumbaya, (IC-11019), 5 Maratha LI ; Capt. Girjesh Pratap Singh (IC-21763), Signals ; Capt. Vishnu Laxman Wadodkar (IC-22128), 167 Fd Regt ; Capt. Yadav Mukherjee (IC-21078) AOC ; Lt. Narain Pillai Chandra Sekharan Pillai (IC-25031), Engineers ; 2/Lt. Prashanta Kumar Gupta (IC-25223), 12 Guards ; JC-34378 Sub. Victor Sequera, 2 Para ; JC-57891 Nb Sub. Din Dayal Yadav, AOC ; JC-34489 Nb/Sub. Lakshkar Singh, Engineers ; JC-45837 Nb Sub. Kabal Singh, Engineers ; JC55212 Nb, Sub. Jagir Singh, 64/45 AD Regt ; 7027364 Hav. (Dvr) Mohammad Hanif Mia, 9 Horse ; 1365411 Hav. Ram Prasan Pandey, 7 Guards ; 1168922 Hav. Mannathukattil Vadekkecherayil Subhastian Thomas, 64/45 AD Regt ; 6867009 Nk. (DVR) Birbal Singh, AOC ; 630016 L/Nk. Deepa Ram, Signals, (posthumous) ; 1518192 Spr. Gurcharan Singh, Engineers ; 4536109 PTR Maruti Bansode, 2 Para ; Maj. Janak Raj Rajput (IC-19272), 3 Raj Rif ; Capt. Ramesh Chandra Dabral (SS-22223), 45 AD Regt ; Capt. Malkiat Singh Dullat (IC-15949), 10 AOP Flight ; Capt. Tek Chand Bhardwaj (SS-20880), 2 Para ; Capt. Kuppuswamy Chandrasekhar (IC-23427), 3 Madras ; 2/Lt. Naginder Pal Singh (SS-23129), 9 Engr. Regt ; 4142336 Hav. Laxmi Narain, 13 Kumaon ; 2551333 Hav. Shanthaiah, 3 Madras ; 2649480 L/Hav. Afzal Alim Varsi, 4 Grenadiers (posthumous) ; 4142194 L/Hav. Vithal Sawant, 6 Maratha LI ; 11088874 L/Hav. Sita Ram, 144 AD Regt (TA) ; 11126163 Nk. Pritam Singh, 126 AD Regt (TA) ; 2749100 L/Nk. Govind Lanjekar, 1 Maratha LI ; 4148168 L/Nk. Uchhap Singh, 6 Kumaon ; 2951615 L/Nk. Chhotan Singh, 14 Rajput, (posthumous) ; 4159053 Sep. Mohan Ram, Naga Regt (posthumous) ; 2458279 Sep. Mathura Dass, 23 Punjab ; 2653314 Gdr. Pit Ram, 4 Grenadiers ; 1037612 Swr Ajit Singh, 7 Cavalry ; 1035847 Swr. Harpal Singh, 7 Cavalry ; Lt. Col. Anil Kumar Sinha (IC-5961), 198 Mtn Regt ; Lt. Col. Anil Baran Guha (IC-7557), 12 Fd Regt. (posthumous) ; Maj. Naresh Sharma (IC-14439), 3 Kumaon ; Maj. Subhash Chander Sharma, (IC-22672), 7 Raj Rif ; Maj. Om Parkash Kohli (SS-19586), 14 Guards ; Maj. Kailash Nath (IC-8460), 6 Fd. Regt ; Maj. Santosh Chauhan (IC-20402), 6 Kumaon ; Maj. Surendra Kumar Bhardawaj (IC-7364), AOC ; Maj. Tirath Singh (IC-13931), 8 Sikh LI (posthumous) ; Maj. Sushil Kumar Sikka (IC-8232), Engineers ; Maj. Devi Singh Shekhawat (IC-21262), 13 Kumaon ; Maj. Gurbans Singh Atariwala (IC-13307), 68 Fd. Regt ; Maj. Vinay Khanna (IC-10144), Signals ; Maj. Jatinder Singh Brar (IC-11612) 71 Armd Regt ; Maj. Ajaypal Singh Khandhari (IC-14248), 1/9 GR ; Maj. Pijush Kanti Barua (MR-1639), AMC ; Capt. Lalgudi Narayanaswamy Sundra Rajan (SS-19509), 177 Fd. Regt ; Capt. Shrikant Nagesh Dhar-madhikari (TA-41367), 129 AD Regt. (TA) ; Capt. Pramod Kumar Chopra (IC-15898) 164 Fd. Regt ; Capt. Shekhar Dutt (SS-19877), 218 Med. Regt ; Capt. Bhajan Singh Katwal (IC-22658), Artillery ; Capt. Bir Nath (IC-23317), 10 Sikh LI ; Capt. Edward Rathnakumar Muthumani David (MR-8498), AMC ; Capt. Rakeshwar Nath Sharma (MR-2466), AMC ; Capt. Raghubir Kumar Virmani (MR-1981), AMC ; Capt. Subhash Vasudev Pradhan (IC-22981), 66 Fd. Regt ; Lt. Mian Dharam Bir Singh, (SS-22121), 1/5 GR ; Lt. Lal Mani Singh (SS-22408), 4/8 GR ; Lt. Joe D'Souza, (SS-22116), Engineers ; 2/Lt. Govind Rava Gaorkar (SS-23986), 22 Mtn Regt ; 2/Lt. Tejinder Singh Sandhu (SS-23438),

Engineers ; 2/Lt. Kuldip Singh (SS-23867), 3/1 GR ; JC-41380 Sub. Mohan Singh, 6 Kumaon ; JC-8992 Sub. AMN (Tech) Jai Narayan Singh, AOC ; Sub. J. N. Singh, AOC ; 2743028 N/Sub. Bhiku Jagu Shirke, 1 Maratha LI ; 2636074 Nb. Sub Phul Singh, 4 Grenadiers ; JC-62026 Nb. Kikkar Singh, 2 Sikh ; JC-58267 Nb. Sub. Shivaji Yadav, 15 Maratha LI ; JC-47536 Nb/Sub. Ramamurthy, 5 Engr. Regt ; JC-60205 Nb. Sub. Bhagat Singh, Signals ; JC-44956 Nb. Ris. Richhapal Singh, 20 Lancers ; 9404678 Hav. Bir Bahadur Tamang, 1/11 GR ; 2846960 Hav. Guman Singh, 17 Raj Rif ; 5736598 Hav. CB Gurung, 4/8 GR ; 4435716 Hav. Darshan Singh, 11 Sikh LI ; 1421561 L/Hav. Phuman Lal, 94 Fd. Coy ; 2845764 L/Hav. Jaswant Singh Rathore, 17 Raj Rif ; 1421552 L/Hav. Nanda Ballabh, 57 Engr. Regt ; 6275350 L/Hav. Kakla Prasad Singh, 11 Inf. Div. Sig Regt ; 1324969 Nk. Krishna Pillai Ramakrishna Pillai, 2 Engr. Regt ; 6265946 Nk. Vithal Dass, 41 Mtn. Bde. Sign. Coy ; 1516214 Nk. Bhag Singh, 109 Engr. Regt ; 5436315 Nk. Gambahadur Thapa, 1/5 GR ; 1177306 Nk. Ragha- van, 68 Rd. Regt. (posthumous) ; 2551377 Nk. Haneeffa, 18 Madras ; 6875708 Nk. Basant Pawar, 30 Inf. Bde. Sig. Coy ; 2846059 Nk. Babu Ram, 2 Raj Rif ; 2854582 Nk. Jeevan Ram, 11 Raj Rif ; 3965649 L/Nk. Ram Chander, 9 Dogra (posthumous) ; 1275781 L/NK. Vijay Kumar, 177 Fd. Regt ; 6320496 L/Nk. K. Vasavan, 11 Inf. Div. Sig. Regt ; 4442564 L/Nk. Jarnail Singh, 10 Sikh LI ; 2958236 L/Nk Ram Janak Chaubey, 14 Rajput ; 1026761 Dfr. Onkar Datta, 4 Horse ; 3965545 Sep. Deputy Singh, Dogra ; 2749807 Sep. (U/L Nk) Baji Rao Jadhav, 5 Maratha LI ; 6320901 Sep. (Dvr) Ram Dhari, AMC, 267 Med. Coy ; 2750956 Sep. Tatoba Deshmukh, 15 Maratha LI (posthumous) ; 4445635 Sep. Nachhattar Singh, 8 Sikh LI (posthumous) ; 2551371 Sep. Bhaskaran Nair, 18 Madras ; 4160385 Sep. Chandra Singh, 15 Kumaon ; 1232212 Gnr (Tech Asstt) Hari Charan Singh Yadav, 22 Mtn. Regt ; 2858961 Gdsm Tilak Raj, 14 Guards ; 2649923 Gdr Azadar Hussain, 4 Grenadiers ; 1437916 Spr Shiv Lal, 57 Engr. Regt ; 632546 Sigm. Ram Nath Singh Patel, 11 Inf. Div. Sig. Regt ; 1037520 Swr Prem Singh, 4 Horse ; 1040917 Swr Ram Chand, 4 Horse ; 1147773 Swr. Nathu Lal, 1 Horse ; Maj. Mohinder Singh Padma (IC-13786), Madras Regt ; Maj. Tilak Raj Chadha (IC-11989), Punjab (posthumous) ; Maj. Satvinder Singh Cheema (IC-14483), 3 Grenadiers ; Maj. Yoginderpal Singh (IC-13406), Assam ; Maj. Sandip Biswas (MR 1851) AMC ; Maj. Amrik Singh Gill (IC-22135), 10 Sikh ; Maj. Surinder Kumar Gupta (IC-18794), 8 GR ; Capt. Ram Kishore Sharma (IC-22197), 8 Grenadiers ; Capt. Rabinder Singh Deol (IC-16714), 17 Horse ; Capt. Jaidavindera Singh Jind (IC-19463), 7 Cav ; 2/Lt. Deepak Raj (IC-25141), 1 Dogra ; 2/Lt. Narender Singh Ahlawat (IC-25103), 15 Grenadiers ; 2/Lt. Narsingh Bahadur Singh (SS-23704), 15 Kumaon ; JC-35550 Sub. Swamynathan, 6 Madras ; JC-43091 Sub. Balkrishnan Nair, 6 Madras ; JC-48971 Nb. Sub. P. J. Pylo, 16 Madras ; JC-61552 Nb Sub. Hari Singh, 3 Grenadiers ; JC-58183 Nb Sub. Sagar Singh, 4 Horse ; JC-49875 Nb. Sub. Khuazika, Assam ; JC-42611 Nb Ris Hawa Singh, 7 Cavalry ; 2555068 Hav. Appukuttan, 6 Madras, (posthumous) ; 2551461 Nk. Daniel Jacob, 19 Madras ; 3953661 Nk. Jagroop Chand, 1 Dogra, (posthumous) ; 3957578 L/Nk Malook Singh Rana, 1 Dogra ; 13603441 L/Nk Dattatray Rane, 2 Para, (posthumous) ; 6318807 L/Nk Bagicha Singh Sigee, Signals ; 1025085 Dfr Khushal Singh, 17 Horse ; 1027614 L/Dfr Vidyandhar Singh, 7 Cavalry ; 256983 Sep. Thadathil Mathew John, 6 Madras, (posthumous) ; 13732850 Rfn Bishamber Dass, 4 JAK Rifle, (posthumous) ; 4439941 Sep. Darshan Singh, 3 Sikh LI, (posthumous) ; 2647519 Gdr Prem Pal, 8 Grenadiers ; 2860366 Gdr Ram Kumar Singh, 15

WITH
TO

OUR WARMEST GREETINGS
ALL OFFICERS AND MEN
OF OUR GALLANT ARMED FORCES

●
**SUNDER AUTO ENGINEERS
PRIVATE LIMITED**

WHITE HOUSE, 91 WALKESHWAR ROAD,
BOMBAY-6 PHONE: 341146 — 352634

●
Manufacturers of:

● STAINLESS STEEL ROTARY PUMP ● FABRICATED MOULD
BOXES ● AUTOMOBILE & DIESEL TRACTORS AND OTHER
ENGINEERING COMPONENTS

●
FACTORY: 28 CHANDIVALI, OFF SAKI VIHAR ROAD, POWAI,
BOMBAY-72. PHONE: 581239.

*With best compliments
of*

PAI MOTOR CO.

478, V. PATEL ROAD, BOMBAY-4.

PHONE: 381129



PAI MOTOR PARTS CO.

24 (a) KENNEDY BRIDGE,
BOMBAY-4.

PHONE: 358919

Grenadiers, (posthumous); 2649320 Gdr Nathi Ram, 3 Grenadiers; 1040297 Swr/Balwant Singh, 7 Cavalry; 2658736 Gdr Nasir Khan, 5 Grenadiers; 1527070 Spr-Amar Singh, Engineers; 1526138 Spr. Gurmit Chand, Engineers; Maj. Harish Singh Rautola (IC-14130), 8 Garhwal; Maj. Bhopal Singh Yadav (IC-13405), 10 Dogra; Maj. Ramondra Kumar Sharma (IC-22590), 10 Dogra; Maj. Raghunath Gopal Shastri (IC-10134), 10 Madras; Maj. Sarjit Singh Sahota (IC-12181) 18 Punjab; Maj. Man Mohan Singh Battu (IC-58481), 2 Mahar; Maj. Rajendra Singh, (IC-20616), 20 Rajput; Capt. Jatinder Singh Bhatia, (IC-19122), Artillery; Capt. Piara Singh (IC-18319), Artillery; Capt. Asit Chaudhuri (IC-19404), 69 Fd. Regt; Capt. Jagdev Singh (IC-20014), Artillery; Capt. Sem Datt (IC-19970), 3 Assam; Capt. Sardar Singh Gajraj (IC-16723), 17 Grenadiers; Lt. Rakosh Kumar Sood, (MS-8477), AMC; 2/Lt. Surinder Singh (SS-23523), 19 Sikh; 2/Lt. Sarabjit Singh Brar (IC-24677), 19 Sikh; 2/Lt. Rajendra Singh, (SS-24284), Scinde Horse; 2/Lt. Sudhir Kumar Bodi (IC-25436), 21 Rajput; JC-45639 Sub. Bakhshi Singh, 19 Sikh; JC-61526 Nb. Sub. Sarup Chand, 17 Grenadiers; JC-45826 Nb. Sub. Shadi Singh, Engineers; JC-44607 Nb. Sub. Dasarathan, 9 Engineer Regt, (posthumous); 1400172 Hav. Mani Ram, 35 Engr. Regt, (posthumous); 1148622 Hav/Gnr Suresh Chander Goswami, 107 AD Regt (TA); 4436302 Hav. Ajit Singh, 10 Sikh LI; 2643663 Nk. Bishan Singh, 8 Grenadiers; 5334566 Nk. Mok Prasad Pun, 3/1 GR, (posthumous); 6289730 Nk. Pothagana Vonkata Ramaniah, Sig; 1516002 Nk. Chandrakant Kadam, 104 Engr Regt; 1321033 L/Nk Veluswamy, 9 Engr Regt; 1327506 L/Nk Thiyagarajan, 664 Engr Plant Coy; 6355227 L/Nk Dharmiyan Singh, Signals; 1366451 L/Nk Ram Narish Singh, 4 Guards; 4049365 Rfn. Narain Singh Bisht, 8 Garhwal; 6479248 Sgm Keshari Prasad Pandey, Signals; 4046376 Rfn. Kushal Singh Ramola, 3 Garhwal; 1288007 Gnr (ORA) Suresh Chander, 66 Fd. Regt; 9410424 Rfn Man Bahadur Rai, 3/1 GR; 3362543 Sep. Nachhattar Singh, 10 Sikh, (posthumous); 2861165 Rfn Ram Dayal, 2 Raj Rif; 4538467 Sep. Sambhaji Sarbaged, 2 Mahar; Maj. Kushal Singh Thapa, (IC-14708), 1 Mahar; Capt. Zafar Ali (IC-22240), 73 Med. Regt; Lt. Suresh Rajan (IC-23002), Signals; Lt. Ramesh Prasad Singh (IC-24980), Engineers; Lt. Kasula Prabhakar Reddy, (IC-23051), Engineers; 2/Lt Narendra Kumar Vyas (IC-23925), 3/9 GR; 2/Lt. Johan Zama (SS-23881), 4 Assam; JC-32960 Sub. Khupkhojin Vaiphei, 4 Assam; 1023142 Dfr Rup Singh, 1 Horse; 2840867 Hav. Chhote Singh, 18 Raj Rif; 10255140 Dfr. Ramappa Purushothama, 16 Cav; 1034880 L/Dfr. Gurdial Singh, 1 Horse; 704788 Nk/Dvr. Arun Kumar, EME; 6357950 L/Nk Venu Naidu, Signals; 2754768 L/Nk Mahadeo Shinde, 6 Maratha LI; 1338442 Spr Rajappan, 5 Engr Regt; 13602225 Rfn. Partap Singh, 18 Raj Rif; 1038447 Swr Gopalakurup Sivarama Kurup, 16 Cav; Lt. Col. Pawittar Singh Takhar, (IC-5830), 69 Armd Regt; Maj. Manmohan Singh Brar, (IC-10563), 75 Med. Regt; Maj. Piyush Kumar Manishankar Bhatt, (IC-13808), 1/9 GR; Maj. Jasbir Singh, (IC-12853), 4 Horse; Maj. Ramchandra Shinde, (SL-688), 20 Maratha LI; Maj. Naresh Chander, (IC-7632), 12 Raj Rif; Maj. Asman Singh Thappa, (IC-3182), 5 Garhwal; Maj. Pahlad Toro, Fd. FIC-15613), 161 Regt; Capt. Abdul Aziz Leeba Shihabuddin, (MS-8116), AMC; Capt. Virinder Kumar, (IC-16026), 98 Mtn Regt; Capt. Puran Das, (SS-22496), 100 Mtn Regt; Capt. Kumud Kumar Pandey, (SS-20322), 33 Lt. Regt (Towed); Capt. Natarajan Anantha Krishnan Iyer, (MR-8247), AMC; Capt. Joginder Lal, (IC-21658), 17 Kumaon; Capt. Ravinder Nath Mehrishi, (MR-2449), AMC; Lt. Daranikotta Uday Shanker (SS-21772), 17 Madras;

2/Lt. Naidu Yeshwant, (SS-23605), 20 Maratha LI ; 2/Lt. Sunder Singh, (SS-23600), 69 Armd Regt ; JC-32525 Sub. Gian Singh, Signals ; JC-4326 Sub. Prem Singh Bhati, 21 Rajput ; JC-53287 Nb Sub. Ram Dhan Ram, 12 Raj Rif ; JC-59018 Nb. Sub. Ram Singh, 4 Rajput ; JC-60285 Nb Sub-Shib Singh, 17 Kumaon, (posthumous) ; JC-45773 Nb Sub. Kunjikrishan, 17 Madras ; JC-56249 Nb Sub. Sher Singh, 1 Para ; JC-61913 Nb. Sub Hira Singh, 3 Para ; 3945095 Nb Sub Jaggu Ram, 4 Para ; 3941808 Nb. Sub. Jaswant Singh, 10 Dogra ; 5833595 BHM Rudra Bahadur Karki, 1/9 GR ; 1150153 Hav. (Gnr) Ram Chander, 38 Med Regt ; 1515902 Hav Harnam Singh, 104 Engr Regt ; 1023923 Dfr Dharam Pal, Armoured Corps ; 1028406 Dfr Wasakha Singh, 69 Armd Regt ; 3152054 Nk Dilbagh Singh, 4 Jat ; 4039299 Nk Gabar Singh Rawat, 3 Para ; 3952824 L/Nk. Rattan Chand, 10 Dogra ; 5837748 L/Nk Indra Bahadur, 1/9 GR ; 6319787 L/Nk. Mohanga Singh, Signals ; 9406029 L/Nk. Dhanraj Rai, 5/11 GR ; 3961568. Sep. Bhagirath, 10 Dogra ; 2756087 Sep. Narayan Malusare, 7 Maratha LI ; 2962388 Sep. Piar Singh, 4 Rajput ; 4160965 Sep. Dil Bahadur Thapa, 17 Kumaon, (posthumous) ; 2565456 Sep. Silvarajan Nai, 17 Madras ; 13913598 Sep. (Dvr) Ram Mehar, AMC ; 1231103 Gnr (RA) Ram Sewak Yadav ; 4049444 Rfn. Darwan Singh Negi, 5 Garhwal ; 1039897. Swr Gurjant Singh, 69 Armd Regt ; 1289539 Gnr (ORA) Dudh Nath, 97 Mtn Regt ; 13602388 Paratrooper Chaini Ram, 1 Para ; Maj. Ram Lal Varma (IC-18712), 13 Raj Rif ; Maj. Gurcharan Singh Procet (IC-20646), 1 Sikh LI ; Capt. Ranjit Sanyal (IC-19462), EME ; Capt. Hitesh Kumar Mehta (IC-23102), 4 GR, (posthumous) ; Capt. Rajindera Rao Tambe (MS-8430), AMC ; 2/Lt. Manas Kumar Bandyopadhyay (SS-23713), 4 Madras ; 2/Lt. Teja Singh Bedi (IC-25065), 5/11 GR ; 2/Lt. Vijay Kumar Chopra (SS-22886), 6 Sikh LI ; JC-37184 Sub. Abho Ram, 12 Raj Rif ; JC-17110 Sub. Dawlatrao Govindrao Fadtare, 7 Maratha LI ; (posthumous) ; JC-61594 Nb. Sub. Jameel Ahmed, 22 Maratha LI ; 1133451 BHM Gurdial Singh, 184 Lt. Regt (PACK) ; 4539188 Hav. Bhagwan Waghmare, 13 Mahar ; 9405471 PS/NK Bir Bahadur Magar, 5/11, GR ; 2553696 L/Nk Chinnathambi 4 Madras, (posthumous) ; 13666453 Gdsm Rung Linga, 13 Guards ; 2962720 Sep. Daya Chand, 21 Rajput ; 2760589 Sep. Gyanu Atmaram Chawan, 7 Maratha LI ; Maj. Virendra Kumar Bhatnagar, (IC-8251), 63 Cav ; Capt. Harbinder Singh Puri (IC-14787), 45 Cav ; Capt. Anup Kumar (IC-20752), 6 Guards ; Capt. Pushpinder Singh Mann (SS-19825), 1 Guards ; Capt. Bratindra Banerjee (IC-22371), 13 Engr Regt ; Capt. Rahul Kar (IC-19120), 51 Engr Regt ; 2/Lt. Dig Vijay Sing (SS-24303), 6 Raj ; 2/Lt. Ranjit Singh Banyal, (SS-24123), 3 Punjab ; JC-30375 Sub. Joginder Singh, 3 Punjab ; JC-22029 Sub. Kalika Singh, 6 Rajput ; JC-60559 Sub. Laxmi Datt Pathak, 9 Kumaon ; JC-36464 Sub Vishnu Jadhav, 22 Maratha LI ; 2444542 Nk. Sukh Ram, 3 Punjab ; 4147924 Nk. Mohan Singh, 5 Guards, (posthumous) ; 9406551 L/Nk Ratna Bahadur Rai, 3/11 Gr. (posthumous) ; 6455473 Dvr Tikam Singh, ASC (AT), (posthumous) ; 4161996 Sep. Bishram Singh, 4 Kumaon, (posthumous) ; 2962914 Sep. Mannu Singh, 2 Rajput, (posthumous) ; 9204931 Sep. Jagrup Singh, 10 Mahar ; 4161330 Sep. Lila Dhar, 17 Kumaon, (posthumous).

BORDER SECURITY FORCE : 66276516 Constable Balbir Singh, 27 Bn, BSF ; 690100996 Sub. Inspr. Madan Lal Aurora, 1 Bn. BSF ; 67855060 Head Constable Kharak Bahadur Thapa, BSF ; 660100184 Sub. Inspr. Bhim Singh, 1 Bn, BSF ; Asstt. Comdt. Wilbert Sarwar Elley, 61 Nb, BSF ; Asstt. Comdt. Prabhu Singh, 2 Bn. BSF ; Asstt. Comdt. Tirpal Singh, 2 Bn, BSF ;

66010029 Sub. Insp. Bhag Singh, 1 Bn. BSF ; 66411087 Head Constable Darbara Singh, 61 Bn BSF ; 660210311 CHM Umra Singh, 2 Bn. BSF ; Asstt. Comdt. Shri Kishan Kumar Sharma, 1 Bn, BSF ; 66132016 Insp. Kumbha Ram, 14 Bn, BSF ; 67143008 Sub. Insp. Pulikottil Devassy Joy, 14 Bn, BSF ; 66143284 L/Nk. Bhairan Singh, 14 Bn, BSF ; 6814002 Sub. Insp. Gokul Deo, BSF ; Supdt. Police. Swadesh Pal Kashyap, 15 Bn, BSF ; 1389 Shri Devinder Singh, Asstt. Comdt. 18 Bn, BSF ; Shri Narain Singh Chauhan, Asstt. Comdt, 12 Bn. BSF ; 66722002 Insp. Shri Barindra Lal Saha, 70 Bn, BSF ; 681100107 Head Constable Lachhu Ram, 11 Bn. BSF ; 66132023 Head Constable Rasul Khan 17 Bn, BSF ; 6670067 Head Constable Raipada Das, 70 Bn BSF (posthumous) ; 66788691 Constable Mukund Singh Bhandari, 78 Bn, BSF, (posthumous) ; 66232087 Head Constable Darshan Singh, 23 Bn, BSF ; 66700208 Constable Amarendra Nath Mallick, 70 Bn. BSF, (posthumous); 67210113 Constable Darshan Singh, 20 Bn, BSF; 66176532 Constable Ajmer Singh, 17 Bn, BSF; 66176531 Constable Sukan Singh, 17 Bn, BSF, (posthumous); Asstt. Comdt Gurmit Singh Sidhu, 72 Bn, BSF ; Asstt-Comdt Bisharam Singh, 72 Bn, BSF ; Asstt. Comdt. K. J. Thakur, 3 Bn BSF; 66577064 Sub. Insp. Balbir Singh, 54 Bn, BSF, (posthumous) ; 68310003 Sub. Insp. Sahib Singh, 28 Bn, BSF; 670010086 Sub. Insp. J. S. Mehta, 3 Bn, BSF ; 66232089 Head Constable Lal Masih, 23 Bn, BSF ; 660211528 Head Constable Babu Lal, 3 Bn, BSF ; 903 Asstt. Comdt. Yashwant Singh Bisht, 61 Bn BSF ; 67555070 Head Constable Darbara Singh, 57 Bn, BSF ; 67555070 Head Constable Darbara Singh, 57 Bn, BSF ; 687220041 Sub. Insp. Chitta Ranjan Mazumdar, 72 Bn, BSF.

WE

**SALUTE OUR
GALLANT ARMED FORCES**

AND

**PLEDGE OUR CONTINUED
SERVICES**

●
KARIA BROTHERS

**DEVKARAN MANSION, VITHALDAS ROAD,
BOMBAY-2**

SPECIAL FRONTIER FORCE : Capt. Ugam Singh, (IC-22297); Company Comdr. S. K. Suri ; Asstt. Company Comdr. Baldev Singh ; Asstt. Coy. Comdr. Man Singh Gurung ; Asstt. Coy Comdr. Surinder Nath Khanna.

GENERAL RESERVE FORCE : G/26512 Mason Pritam Chand, 3 Permt Wksp Coy, GREF, (posthumous).

JAMMU AND KASHMIR MILITIA : Maj. Surinder Singh (SS-18654), 11 J & K Militia ; JC-46 Sub. Gurdit Singh, 8 J & K Militia ; 9106240 CHM Jagdish Mitter, 8 J & K Militia ; 9071692 Nk. Sham Lal, 11 J & K Militia ; 9073147 Sep. Shammas Din Moulvi, 9 J & K Militia.

NAO SENA MEDAL NAVY

Lt. Comdr Mauli Bhushan Ghosh ; Lt. Cdr. Narindra Nath Anand ; Lt. Ravinder Kumar Narad ; Randhir Singh, Mech 3, No. 66233 ; Ayyappan Pillai Ravindran, PO Tel, No. 49018 ; Swatantra Kumar, ERA 4, No. 69135 ; Abbas Ali Khan, SWA 4, No. 51437 ; ; Lt. Cdr Janardan Deo ; Sub. Lt. Madanjit Singh Ahluwalia ; Nar Bahadur Thappa MV Era 1, No. 50529 ; Chandra Kanti Tiwari CPO GI No. 44510 ; Jai Narayan Sharma PO PTT No. 86186 ; Cdr Hari Mohan Lal Sanena ; Surgeon Cdr. Gnanmani Peter Christian ; Lt. Cdr. Bharat Bhushan ; Lt. Cdr, Suresh Soota ; Lt. Cdr. Manoranjan Sharma ; Lt. Suresh Hiranand Kundanmal, (missing) ; Lt. Gurnam Singh ; Sub. Lt. Samirakanti Basu ; TVR Nambiar MCPO II No. 47448 ; JJ Kumar CPO No. 45473 ; R P. Sing, Mech. 3, No. 67488 ; Kanwar Pal Singh PO Tel No. 48729 ; C. S. Tyagi PO GI No. 48039 ; Lt. Prabhat Kumar Jindal ; Lt. Vinod Krishna Chaudhry ; Lt. Arvind Lochan ; Shiv Singh, MCPO I, No. 31804 ; Abdul Hameed, MCPO II (TASI), No. 12402 ; Syamal Kumar Sen, MCERA II, No. 50831 ; M. K. Khandpal, (MC ME II), No. 46968 ; L. B. Mishra, LS DIV I, No. 61782 ; Cdr Rabindra Singh Huja ; Sub Lt. Bhagwan Singh Thakur ; Mahipal Singh, LS, No. 86514 ; Lt. (SDB) Darshan Lal ; Lt. Jayasheel Vishwanath Natu ; Lt. George Albert Donald Duke ; Sub Lt. Arup Kumar Bandyopadhyaya ; Lt. Cdr. Ashwani Kumar Sharma ; Lt. Cdr. Kankipati Appala Satyanarayana Zagapathi Raju ; Lt. Cdr. Ufulla Dabir ; Lt. Cdr. Surendra Nath Jha ; Devi Prasad Mech. 3, No. 49411 ; Sant Ram, Ldg Seaman No. 82060 ; Cdr Tribhuwan Narayan Singhal ; Cdr. Sukhmal Jain ; Cdr. Umesh Chandra Tripathi ; Lt. Cdr. Yatish Kumar Satija ; Lt. Cdr. Jasbir Singh Cheema ; Lt. (SDR) Kashmira Singh ; Kartar Singh Salaria, VSM, MCPO 2 (AH) No. 35584 ; S. Singh, ERA 3, No. 52566 ; L. Prasad, LDG Cock (O), No. 66441 ; Cdr. Jogendra Khanna ; Cdr. Gulab Mohan Lal Hiranandani ; Cdr. Trilochan Singh Khurana ; Cdr. Ranjit Kumar Chaudhuri, Cdr. Raveendra Nath Singh ; Cdr. Sita Prasad Kaprawan ; Lt. M. V. Paul ; E. J. Princhan Ldg Seaman No. 82811 ; S. C. Prabhakar Seaman I No. 84338 ; Papachan Vidayathil Lonappan, Mech 3, No. 65655 ; Capt. Vithal Amitrao Dharoshwar ; Comdr. Hardev Singh ; Lt. Comdr. Shashi Kant Kulsroshta ; S. L. Gupta MC EAR I No. 47023 ; J. Singh MC Mech II No. 64721 ; T. Singh MC Mech (P) II No. 64843 ; T. Michael Ch ERA No. 49796 ; Cdr. Chavur George Francis ; Cdr. Mahendra Pal Wadhawan VSM ; Lt. Cdr. John William Daniel ; Sub. Lt. Kailashpati Ramalingappa Girwalkar ; R. Singh, Mech III No. 64220 ; Capt. Inder Mohan Narang (Merchant Navy) ; Cmdr. Rajendra Prasad Bhalla ; Cmdr. Lajendra Rai Sood, VSM ; Cmdr. Chandra Mohan Vyas ; Cmdr. Gulab T Wadhvani ; Ag Commander Pallassarna Parameswara Iyer Sivamani ; Lt. Comdr. Sishnu Kumar Raizada ; Lt. Vinod Kumar Jain ; (posthumous) ;

VAYU SENA MEDAL (AIR FORCE)

Sqn. Ldr. A. M. Mehta (5051) F (P); Sqn. Ldr. B. S. Saini (6011) F (P); Flt. Lt. K. B. Bagchi (9987) Adm; Flt. Lt. V. Arora, (7934) Air Sig; Flt. Lt. M. B. Madon (7681) F (P); Flt. Lt. S. K. Mitroo (7688) F (P); Flt. Lt. S. Balasundaram (8274) Tech. Armt; Flt. Lt. G. S. Dhillon (8376) F (P); Wg. Cdr. S. K. Roy, (4032) F (P); Sqn. Ldr. T. K. Seshachari, (4954) AE (M); Sqn. Ldr. T. J. Fernandes, (5287) F (P); Flt. Lt. P. S. Subramanian, (7974) AE (M); Flt. Lt. S. M. Ghatate, (8665) F (P); 220331 Sgy. Sohan Lal Pal, Ft. Armr; 228889 Sgt. S. K. Soni, Elect. I; Wg. Cdr. R. J. Ambegaonkar (4622) F(P); Sqn Ldr. B. S. Raju, (6724) ADM; Sqn. Ldr. J. K. Dhawan, (6279), AE (M); Flt. Lt. P. S. Dikshit (7487) F(N); Flt. Lt. P. George, (9603) AE (M); Flt. Lt. J. S. Ghumman, (10123) F (P); Flt. Lt. Joginder Pal, (10355) AE (M); 200582 Flt. Sgt. Doraiswami, Elect. I; Wg. Cdr. Koshav Dev Kanagat, (4433) F (P); Sqn. Ldr. Krishnaswamy Chandra Shekhar, (5670) F (P); Flt. Lt. Kuldip Singh Bajwa, (9757) F (P); Sqn. Ldr. Ajai Kumar Brahmawar, (5858) F (P); Sqn Ldr. Dinkar Shantaram Jatar, (6521) F (P); Flt. Lt. Parminder Jit Singh Sidhu (10488) F (P); Sqn. Ldr. Sahay Sanjeeva (6139) F (P); Flt. Lt. Harjit Singh Bedi (7603) F (P); Wg. Cdr. Gursharan Singh (4623) AE (M); Wg. Cdr. Kumarapalayam Ramasubramniam Natarajan (4270) AE (M); Wg. Cdr. Anadi Shankar Sarkar (4273) AE (M); Sqn. Ldr. Satwant Singh (5010) F (P); Sqn. Ldr. Tehmuras Ratanshaw Patel (5192) F(P); Sqn Ldr. Ujjal Singh Pruthi (5488) Med; Flt. Lt. Jagdish Bhattacharya (7739) F (P); Wg. Cdr. Jorney William Greene, Vr. C. (4093) F (P); Flt. Lt. Pradip Kantilal Gandhi, (8142) F (P); Flt. Lt. Mohan Kumar Prabhakar Samant, (9061) F (P); Flt. Lt. Ravindra Vikram Singh, (9524) F (P); Flt. Lt. Rudra Krishna Bishnoi (9533) F (P); Flt. Lt. Konerirajapuram Sreenivasan Raghvachari, (9743) F (P); Fg. Offr. Gey Darasha Bomboat, (12025) F (P); Gp. Capt. Kottavathukal Thomas Abraham (3600) F (P); Wg. Cdr. Vijay Chand Manokotia, VM, (4041) F (P), (Bar to Vayu Sena Medal); Wg. Cdr. Man Singh, (4094) F (P); Wg. Cdr. Karam Singh, (5132) AE (M); 217249 Sgt Kanniah, Air Sig; Wg. Cdr. Gandharva Sen AVSM (4429) F (P); Wg. Cdr. Jagjit Singh Sawhney (4449) F (P); Sqn Ldr. Narinder Singh Verdi (5116) F (P); Sqn. Ldr. Shailesh Kumar (5520) Adm; Flt. Lt. Ramesh Thakurdas Chandani (9797) F (P); Maj. Kuldip Singh Sahney, (IC-13279); Flt. Lt. Nayanathara Kujan Pillai Raghava Menon (8766) F (P); Flt. Lt. Prakash Nath Sharma, (9412) F (P); 234022 Sgt. Pacheeri Sivasankaran, Elect. I; Capt. Lakshminaryan Padmanabhan (IC-13640), AIR OP Pilot; 18986 Warrant Offr. Gurdas Ram Dixit, Fitter I; 400372 Warrant Offr. Rangappa Rangaswamy, Fitter Armour (Gunner);

WITH

**OUR WARMEST GREETINGS TO
OUR GALLANT ARMED FORCES**

PRAKASH AUTO AGENCY

KOTARI MANSION, PARIKH STREET, BOMBAY 7

Phone 3 5 0 0 2 5

With

Best Compliments

From

NAVNIT STAINLESS STEEL CORPORATION

Phone

Office :- 336166

Res :-

333519-33477

191, PINJRAPOLE ROAD
BOMBAY — 400-004

- **EVER BRIGHT—EVER BEAUTIFUL**
- **WON'T CHEAP—WON'T RUST—WON'T PEEL**

Manufacturers & Dealers of

“BALKRISHNA BRAND” STAINLESS UTENSILS.

- **STRONG AND DURABLE FOR STURDY SERVICE**
- **SALES—MAKING FIRST, SECOND AND ALWAYS**



NAVNIT TEXTILES

MANUFACTURERS OF

BED SHEETS—PILLOW COVERS & NAPKIN'S

INDIAN ARMED FORCES

ORGANISATION AND ADMINISTRATION

MINISTRY of Defence in the Government of India is the central agency for formulating and obtaining policy decisions on all matters relating to the defence of the country. As at present, the Ministry of Defence consists of (a) Ministry proper, which is responsible for work connected with the three Services, and the inter-Services Organisations, (b) The Department of Defence Production, which is responsible for all matters relating to defence production, research and development, and (c) The Department of Defence Supplies, which is responsible for the mobilisation of the indigenous resources with a view to establishing independent national sources and resources for the supply of the various types of defence equipment and components. The Ministry is also the central agency for obtaining the necessary finances for defence expenditure and its proper allocation among the three Services. The appropriate authority for the purpose is called the Ministry of Defence (Finance) with the Financial Adviser as the Head. As at present, the Ministry of Defence, including the Departments of Defence Production and Defence Supplies is responsible for the following:—

(i) Defence of India and every part thereof, including preparation for defence and all such acts as may be conducive in times of war to its prosecution and, after its termination, to effective demobilisation. (2) The Armed Forces of the Union namely, Army, Navy and Air Force. (3) The Reserves of the Army, the Navy and the Air Force. (4) The Territorial Army and the Auxiliary Air Force. (5) The National Cadet Corps. (6) Works relating to Army, Navy, Air Force and execution of works relating to such Defence Production Organisations as are entrusted to M. E. S. (7) Military Farms Organisation. (8) Canteen Stores Department (India). (9) Civilian Services paid from Defence Services Estimates. (10) Hydrographic surveys and preparation of navigational charts. (11) Formation of cantonments, delimitation/excision of Cantonment areas, local self-government in such areas, the constitution and powers within such areas of Cantonment Boards and authorities and the regulation of house accommodation (including the control of rents) in such areas. (12) Acquisition, requisition, custody and relinquishment of land and property for defence purposes. Eviction of unauthorised occupants from defence land and property. (13) Matters relating to ex-Servicemen, including pensioners.

COMMANDER



For homes and hotels, shops and showrooms, snack bars and restaurants, bathrooms and bedrooms, workshops and clubrooms. They are durable and washable, portable and presentable, light and strong. They come in black and in colours, 4' & 12' & 18' high.

Ultra-modern Stools

Available at all leading stores.

PHENOWELD POLYMER PRIVATE LIMITED

Saki Vihar Lake Road, Bombay-72 Tel: 582084

DEFENCE COMMITTEES

Cabinet Committee on Political Affairs : In order to ensure expeditious handling of work, a network of Committees has been established at various levels. In view of the fact that the supreme responsibility for national defence rests with the Cabinet, all important questions relating to defence are dealt with by the Cabinet Committee on Political Affairs. This Committee, therefore, is the most powerful and influential. **Committee of Secretaries:**—At the Secretariat level, there is a network of Committees of Secretaries. The *raison-d'être* of these Committees is to ensure co-ordination of action in quick and efficient manner. **Committees to Assist The Defence Minister :** The Defence Minister is assisted by two Committees known as the Defence Minister's Committee' and the Defence Minister's (Production and Supply) Committee. The Defence Ministers Committee is composed of the Defence Minister, the Minister of Defence Production, the Defence Secretary, the Chief of the Army Staff, the Chief of the Naval Staff and the Chief of the Air Staff, the Financial Adviser (Defence) and the Scientific Adviser to the Minister of Defence. The Committee deals with the Defence Plan and all important matters concerning the three Services and the Inter-Services Organisations. The Defence Minister's (Production and Supply) Committee has replaced the Defence Minister's (Production and Defence Minister's (Supply) Committee.) The Committee consists of the Defence Minister, the Chiefs of Staff, the Defence Secretary, the Secretary Defence Production, the Secretary Defence Supplies, the Director General of Ordnance Factories, the Director General of Inspection and the Chief Controller (Research and Development). The Committee regulates Defence Production effort in the country and co-ordinates it with the civil industrial capacity to achieve self-sufficiency in defence stores, reviews from time to time, the mobilisation plans for defence production, approves projects for submission to the Committee on Political Affairs of the Cabinet, gives policy decisions on all matters for the effective operation of the Ordnance Factories. Apart from these functions, the Committee also gives Policy decisions on all matters relating to the important substitution in the field of Defence, particularly instrumentation, vehicles and ship building and other matters dealt within the Department of Supplies. **The Appellate Committee on Pension :** This Committee provides a final forum of appeal in respect of disability and family pensions claims relating to the Armed Forces personnel. The Committee consists of the Minister of Defence, the Minister of Defence Production, the Defence Secretary, the Chief of Staffs concerned, the Financial Adviser, Defence Services, the Director General Armed Forces Medical Services and the Judge Advocate General of a Service, other than that to which the claim pertains. **The Defence Research And Development Council :**—This Council is responsible for co-ordinating and directing scientific research relating to defence problems, particularly the development and improvement required by the Armed Forces. The Council consists of the Defence Minister, the Minister of Defence Production, the Chiefs of Staff, the Financial Adviser (Defence), the Scientific Adviser, the Director General of Armed Forces Medical Services, the Director General, Council of Scientific and Industrial Research, Chairman, University Grants Commission, the Director, Indian Institute of Science, the Director, National Aeronautical Laboratory, the Director, National Chemical Laboratory, and the Director, Tata Institute of Fundamental Research. Whenever, the Defence Minister is at Headquarters, meetings are held by him twice weekly and these are attended by the

Cabinet Secretary, the Defence Secretary, the Secretary, Defence Production, the Secretary, Defence Supplies, the Scientific Adviser, the Additional Secretary, and the Chiefs of Staff. At these meetings, latest developments on the borders and those in the country having bearing on defence, are discussed so as to enable the Ministry and the Chiefs of Staff to take prompt action. The meetings provide a forum of frequent review of policy matters and also enable important problems of the Services to be brought to the notice of the Minister directly to facilitate co-ordinated and quick action. **The Chiefs of Staff Committee:** The three Chiefs of Staff meet as the Chiefs of Staff Committee. This committee is presided over by the member who has been the longest on the Committee. The Chiefs of Staff are collectively the professional military advisers to the Government on important defence matters. The Committee is, in turn, assisted by several sub-committees dealing with specific problems relating to planning, training etc. The Secretariate for the committee, and its sub-committees is provided by the Cabinet Secretariate (Military Wing). **Ordnance Production Board And Aeronautics Production Board:** An Inter-Ministerial Board, under the name Ordnance Production Board, with financial and policy making powers, was set up in May 1971. As at present the Secretary of Defence Production, is its Chairman. Representatives of the Department of Expenditure, Economic Affairs, (Defence), Defence Supplies and Industrial Development, are the members. The Director General of Ordnance Factories and representatives of the three Services are also the members. The aim is to bring together, in central authority, various Governmental functions in respect of Ordnance Factories so that decisions can be taken under joint responsibility and without any delay. Within limits of budget provisions, and subject to the approval of the Minister, the Board broadly enjoys the financial and executive powers of the Government. Consequent on the constitution of the Ordnance Production Board, the Defence Production Board constituted in May 1964, was abolished. In the field of aeronautics, including missiles, an Aeronautics Production Board has been set up. It functions under the Chairmanship of the Secretary, Defence Production. The Board deals with all matters relating to the production of aircraft, aeronautical equipment and missiles, particularly, plans of production, optimum utilisation of existing facilities, creation of new facilities, establishment of production of new items, measures for achieving self-sufficiency and policy for stocking of materials for production.

With Best Compliments

from

ADAM'S APPARELS

8-B. CUSROW BUILDING, COLABA, BOMBAY-5

THE HOUSE OF SHIRTS—Rs. 30 Onwards

INTER-SERVICE ORGANISATIONS

THERE are a number of inter-Services Organisations of common interest to all the three Services. These organisations are administered by the Ministry directly. Following are some of the important such organisations:—

OFFICE OF THE CHIEF ADMINISTRATIVE OFFICER : This office is the largest of the Inter-Services Organisations. The Chief Administrative Officer, who is a Deputy Secretary to the Government of India, is its Administrative Head. He is responsible for the general administration of staff of Armed Forces Headquarters and Inter-Services Organisations and controls the Armed Forces Headquarters Civil Services. As Station Commander, he controls the Defence Pool of residential accommodation for officers of the Defence Services employed at the Headquarters and Inter-Services Organisations. He is also the authority dealing with the allotment of office accommodation for officers of Defence Headquarters.

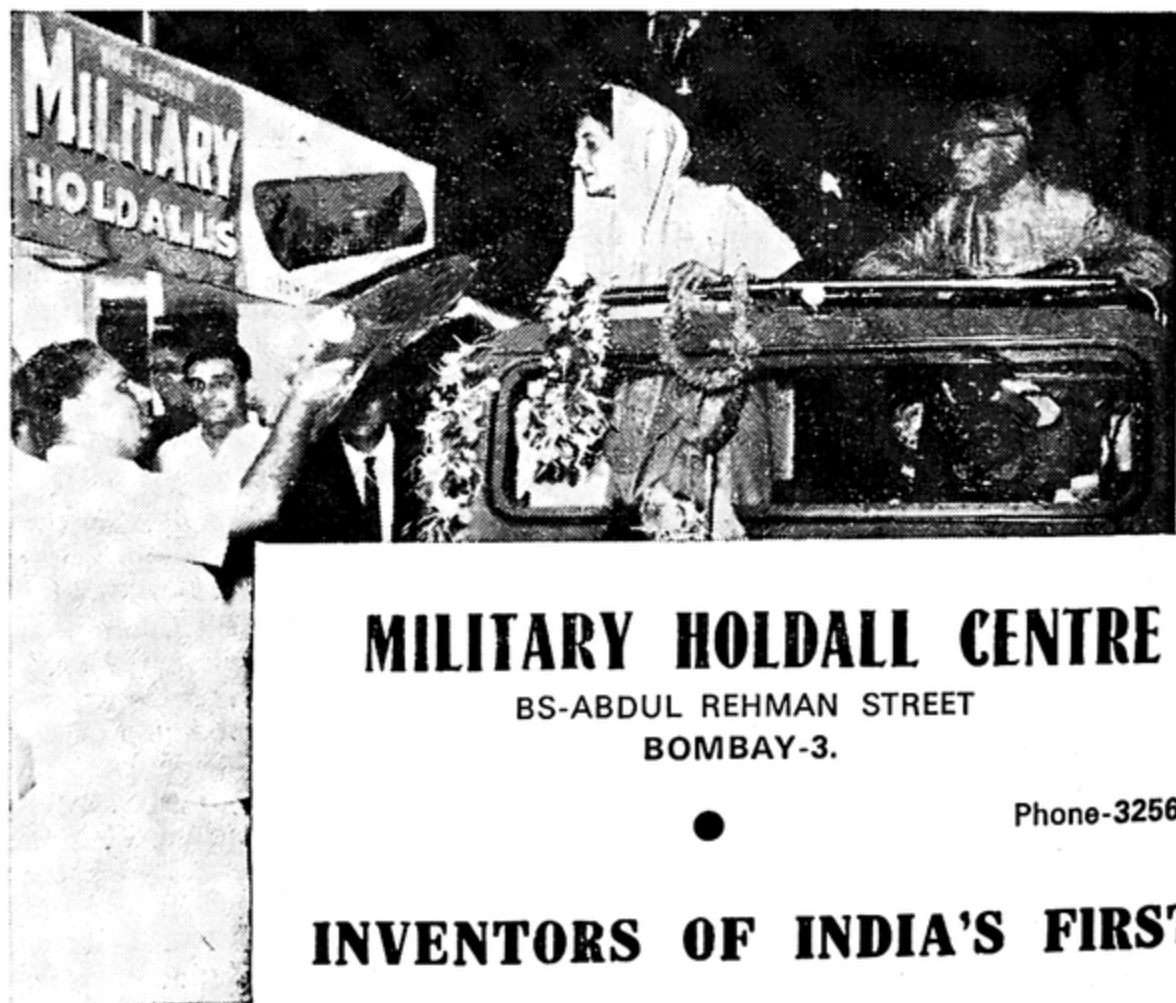
DIRECTORATE GENERAL OF NATIONAL CADET CORPS: (See Second Line of Defence).

THE DIRECTORATE GENERAL OF ARMED FORCES MEDICAL SERVICES: The DGAFMS is the Head of the integrated medical services for the Army, the Navy and the Air Force. There is a Medical Services Advisory Committee, with the Director General as the Chairman, and the Directors of Medical Services of the Army, the Navy and the Air Force, as members. This Committee makes recommendations to Government through the Chiefs of Staff Committee, on matters of medical organisation or policy. The Director General is also the Chairman of the Armed Forces Medical Research Committee of the Research and Development Council. In this capacity, he is responsible for advising on research in subjects relating to service medicine. He maintains liaison with the Director General of Health Services, the Medical Council and the Defence Services Medical Organisations of other countries. The Armed Forces Medical College, Poona, the Armed Forces Medical Stores Depots at Bombay, Lucknow, Delhi Cantt, and Poona, the Artificial Limb Centre at Poona, the Armed Forces Blood Transfusion Centre, Delhi Cantt. and Armed Forces Medical Rehabilitation Centre, Kirkee, function under his control.

DIRECTORATE OF PUBLIC RELATIONS :—This organisation is concerned with the public relations work of the Ministry of Defence and the Armed Forces. The organisation functions under the Director of Public Relations (Defence), who is an officer of the Ministry of Information and Broadcasting, which also provides some technical staff. All other officers are appointed by the Ministry of Defence. There are Public Relations Units of this organisation at Bangalore, Bombay Jodhpur, Chandigarh, Jullundur, Jammu, Srinagar, Lucknow, Allahabad, Mathura, Calcutta, Cochin, Shillong, Siliguri, Tezpur, Kohima, Visakapatnam and Palam (Delhi).

Arrangements for the coverage of the 14 Days War in December, 1971, by the Indian and world news media, constituted the most important activity of this Directorate during the year 1971. Four Press Camps were established at Jullundur, Udhampur, Calcutta and Siliguri. Each Camp accommodated 75 correspondents,

YOU TOO HAVE SERVED THE COUNTRY
••• PRIME MINISTER INDIRA GANDHI'S WORDS OF
CHEER TO THE SMALL INDUSTRIALIST •••



MILITARY HOLDALL CENTRE

BS-ABDUL REHMAN STREET
BOMBAY-3.

● Phone-325647

INVENTORS OF INDIA'S FIRST
NON-LEATHER HOLDALL

● ● ●

A TRUE FRIEND AND

FAVOURITE OF

THE SOLDIER AND THE CIVILIAN ALIKE

Six jeeps were provided at each Camp for visits of correspondents and cameramen to forward areas. Half a dozen officers were posted at each Camp to conduct correspondents and cameramen to battle zones. Indian correspondents, working for Indian news organisations, were formally accredited as War Correspondents and put in uniform. Seventy Press Parties were conducted to forward areas in the Eastern Region and fifty in the Western Region. In all, over 1,600 Indian and foreign correspondents and cameramen were given facilities to cover the war in forward areas. In addition, arrangements were made to brief the Press daily at all the Base Press Camps. Senior Army Officers briefed the Press at the Camps. At Bombay, Vishakhapatnam, Shillong, Allahabad and Delhi, senior Naval and Air Force officers briefed the Press on Naval and Air Force operations. In New Delhi, two briefings were held every day for the Indian and the world press. Each briefing was attended by approximately two hundred correspondents. No censorship of any kind was imposed. Correspondents were free to send their despatches and photo and film coverage expeditiously. Six mobile teams, each consisting of an observer, a cine cameraman, a still photographer and an All India Radio correspondent were sent to six different theatres of war to provide authentic coverage from the front line. Two teams were assigned to Navy and two to Air Force for similar coverage. All members of the mobile teams were granted honorary commissions in the Army, the Navy and the Air Force to enable them to perform their functions without any impediment.

Apart and aside of the above, the Directorate continued its peace-time activities during the rest of the year. Over six hundred Press notes and handouts and thirty illustrated feature articles were released to the press. About 70,000 photographs relating to Defence activities were supplied to the Press. The Directorate arranged visits for about fifty Radio and TV correspondents of Defence establishments. Coverage was also provided to the commissioning of the Indian Naval Air Squadron 330, comprising Sea King Helicopters; the commissioning of the Submarine base INS 'VIRBAHU'; the Navy's entry into the missile era with the acquisition of a squadron of missile boats; Colours presentation to the Army Education Corps at Pachmari, the 1st Horse and the 7th Cavalry at Babina; inauguration of the first phase of the Air Force Academy at Hyderabad; Fire power demonstration at Tilpat and Colours presentation to No. 12 Squadron by the President.

ARMED FORCES FILMS AND PHOTO SECTION :—This Division looks after the needs of the Ministry of Defence and the three Services in regard to the production, procurement and distribution of films, photographs and art work, etc. related to training, security, intelligence and Defence Research, Special publicity assignments are also handled by the Division. The production of Defence Training films is mostly done through the Ministry of Information and Broadcasting while a few films are produced directly by the Division for reasons of security or urgency. Five training films (thirteen reels) were completed during the year 1971. Work was in progress on the production of fifteen additional films. Over seven hundred prints of training films, newsreels and general information films were added to the Film Library during the year. Over 3,000 reels were distributed for use by the Services. Ninety-two Defence-oriented film shows were given for the benefit of the Armed Forces Units and educational institutions, located within Delhi area. In addition, films on Civil Defence were screened in

HERE IS THE

Salute to the Gallant Armed Forces

FROM

**One who does not seek
any publicity on that
account**

- **LARGEST STOCKISTS OF ALL SIZES OF :
BLACK AND GALVANISED PIPES**
- **DISTRIBUTORS OF TATAMAKE PIPES OF :
THE INDIAN TUBE CO. LTD., CALCUTTA.**
- **STOCKISTS OF :
ZENITH STEEL PIPES LTD. KHOPOLI.**

The Bombay Registered Pipe Dealers Sydicate Pvt. Ltd.

93, NAGDEVI STREET, BOMBAY-3.

Phone :—Office : 321667 - 320214

Godown : —370970
Gram : — "PIPESTOCK"

Branches :— 522/2 SAROJ MANSION, O/S.
PANCHKUVA GATES, AHMEDABAD.

Phone : — 54349

Gram : "PIPE REPIER"

the Armed Forces Cinemas continuously for a month for the benefit of the employees of Defence Headquarters. Fifty thousand two hundred and sixty-four photographs, over five thousand photostat prints, four hundred slides and one thousand seven hundred and ninety items of art work were also produced by the Division during the year.

ARMED FORCES HISTORICAL SECTION :—During the year 1971, several narratives already written by Historical Section on the post-independence operations, involving the Indian Armed Forces, were further processed. The 'History of the Corps of Indian Engineers', 'Operation Polo', 'The Police Action Against Hyderabad (1948)', and 'Operation Vijay', liberation of Goa and other Portuguese Colonies in India (1961), were likely to be out of the press in the near future. The 'History of the Indian Armed Forces in U. N. Operations in the Congo' was in the proof stage. The narratives on 'J & K Operations, 1947-48', and 'The History of the Indian Custodian Forces in Korea 1953-54' were finalised. The narrative on 'The Role of Indian Troops with UNEF in the Middle East' was revised and was ready for editing. An illustrated account of the 'Indian Military Costumes Through the Ages' was being finally edited for publication. The Historical Section had taken in hand a narrative on 'The stories of heroism displayed by our armed Forces in the operations against Pakistan in 1965.' Attempts to complete the collection of material for detailed narratives on the Chinese invasion in 1962 and Pakistani aggression in 1965, were continuing. The study on 'The Influence of Weather on Military Operations' was in proof stage and was likely to be out shortly. 'The History of the Indian Armed Forces in Indo-China, 1954-60' had been finalised and was in the process of being sent out of the press. India had become a member of the International Committee on the History of Second World War, an international organisation engaged in research group level. Liaison was being maintained with the International Committee. In order to keep abreast of developments in the field of historical research, this Section had associated itself with some of the professional bodies, namely, the Indian History Congress, Indian Historical Records Commission, Institute of Historical Studies, etc. and attended their annual sessions.

MILITARY LANDS AND CANTONMENT DIRECTORATE :—The Directorate is responsible for delineation and administration of cantonment areas, and for the management of military land and buildings, not in active use by the armed forces. It also deals with acquisition and hiring of lands for the use of the armed forces and the disposal of such property as is declared permanently surplus to defence requirements. The Director is assisted by a Joint Director and other officers at his Headquarters at Delhi. A Deputy Director and Staff Officers are also posted to each of the Command Headquarters. At present, there are 19 military estate circles and 62 cantonments in the country. The Municipal administration of the cantonments are the constitutional responsibility of the Central Government and is discharged through the Cantonment Boards in accordance with the provisions of the Cantonment Act, 1924. These Boards are responsible for the provision of civic and welfare services to the local community, including, sanitation and environmental guidance, medical care, water supply, primary education and other essential services like gardens, playing grounds etc. The Officer

WITH BEST COMPLIMENTS FROM :

Alumilite Private Limited

Manufacturers of :

**Architectural Aluminium Products like
WINDOWS ■ DOORS ■ PARTITIONS ■ FALSE
CEILING ■ NORTHLIGHT GLAZING, ETC.**

If you are planning to have your own bungalow contact us for Sliding Doors and Sliding Windows for elegance, durability and economy.

Dhiraj Chambers, 5th Floor, 9, Waudby Road,
BOMBAY-1.

WITH OUR

**WARMEST GREETINGS TO ALL OFFICERS AND
MEN OF OUR GALLANT ARMED FORCES.**

The Standard Pipes & Fittings Co.

93-A, NAGDEVI STREET, BOMBAY-3.

Phone : Office : 323444

Resi. : 472514

Grams : — 'STAND PIPES'

THE NAME TO REMEMBER FOR :

- SEAMLESS PIPES & TUBES ■ SEAMLESS & ERW BUT-
WELDED ELBOWS. 'BEND TEES'
- PLANGES SLIPON ■ SCREWED GALVANISED
PIPES.
- PIPE FITTINGS AND 'VALVES'.

Commanding the Station functions as the President of the Cantonment Board. There are also elected and nominated members on the Boards. The Boards have deliberative and executive functions, the latter being discharged by the Cantonment Executive Officer, who is an Officer of the Military Lands and Cantonment Services. Cantonments, with a population exceeding 10,000 are classified as Class I Cantonments, those with a population between 2,501 and 10,000 are Class II Cantonments and the rest are Class III Cantonments. As on 1-1-1972, the number of Class I, II and III Cantonments was 27, 21 and 14 respectively.

SCHOOL OF FOREIGN LANGUAGES :—The School provides facilities for instructions in foreign languages to Service Personnel and civilian employees of the Government of India. Outsiders, in a limited number, are also admitted, subject to the availability of seats. The languages taught are Arabic, Burmese, Chinese, French, German, Japanese, Bhasha Indonesia, Malay, Persian, Russian, Spanish and Tibetan. The regular courses conducted at the Schools are :— (i) Preliminary (12 months' duration); (ii) Advanced (18 months' duration) and (iii) Interpretership (18 months' to 26 months' duration, depending upon the language offered). The first two are part-time courses, while the third course is a whole-time one. The Preliminary and the Advanced courses commence in April and August every year. The Interpretership Course is held on an 'As required' basis. Examinations are conducted through a Board of Examiners. In addition to school students, certain other categories are also allowed to take the examination as private candidates *e.g.* Service Officers, members of the Indian Foreign Service, and Intelligence Organisations etc. A test of Interpretership standardised is held by the School for determining eligibility for the grant of 'language allowance' sanctioned by the Government. The School conducts examinations in Italian and Swahili for Service Officers who learn them on their own. The School also conducts examination for Army Officers in the Regimental languages including Kannada, Malayalam, Marathi, Nepali, Punjabi, Tamil and Telugu. Translation facilities are provided to Government Offices/Departments through a panel of translators maintained by the school. After examination of the recommendations, in the Study undertaken by Government, on assessment of need for personnel knowing foreign language for Government work and available training facilities. It has been decided that the existing arrangements should remain unchanged.

INDIAN SOLDIERS, SAILORS AND AIRMEN'S BOARD:—The ISS & A Board is the policy making and directing body at the All India level for schemes and measures in connection with assistance to ex-servicemen and welfare of the serving personnel and their families. It is a high-level body with Defence Minister as the Chairman. The State Governments/Union Territories are concerned with much of this activity. There are Soldiers' And Airmen's Boards, at State levels under the chairmanship of Governor/Lt. Governor. The State Boards control and direct the activities of Boards created in every district where the number of serving personnel and their families exceeds a certain limit. The ISS&A Board co-ordinates the activities of the State Boards and takes decisions at the national level. A number of Funds created for financing economic as well as welfare activities, are administered by the Board.

WE

SALUTE THE OFFICERS
AND MEN OF OUR GALLANT
ARMED FORCES

AND

PLEDGE OUR MOST DEDICATED
SERVICES TO THOSE WHO
HAVE SERVED OUR COUNTRY
THE BEST



ALKAN INSULATION COMPANY

506, Kakad Chambers, 132, Dr. Annie Besant Road,
Worli, BOMBAY - 18.

For us -

**country is above all,
ever and always.**

DIRECTORATE GENERAL OF RESETTLEMENT :**Published for the Special Attention of Retired/Retiring Personnel:**

THE Director General of Resettlement is responsible for efficient functioning of the Indian Soliders', Sailors' and Airmen's Board at all levels. DGR Supervises the work of this set-up, gives necessary advice and guidance to them and liaises with both civil and military authorities to ensure that the District Boards function vigorously and efficiently. For this purpose DGR has four command Liaison Officers of the rank of Colonel/Group Captain/Captain whose duties include liaison with the State Governments and Command Headquarters and subordinate formations of Army, Navy and Air Force. Steps have been taken to strengthen them and to interest the District Magistrates and Commissioners in their functioning, More important of these steps are :—

(a) To enable advance planning for resettlement of the ex-Servicemen, a system has been introduced under which all the relevant service and other particulars are listed in a card index, about one year before the release, and sent by the various Record Officers to the Directorate General of Resettlement, State Soldiers', Sailors' and Airmen's Boards and District Soldiers', Sailors' and Airmen's Boards. An experienced officer from the Indian Statistical Service has been placed in charge of this Wing in the Directorate. (b) To facilitate absorption of Servicemen in civil employment, the work of establishing equalisation of skill between trades in the three Services and civil trades has continued and considerable ground has been covered. Out of two hundred and forty-four Army trades and thirty-two Air Force trades, one hundred and twenty-five Army trades and twenty Air Force trades have already been so equated. (c) To equip the ex-Servicemen for resettlement in civil life in various trades, a scheme for pre-cum-post-release training for 1,000 (other ranks) of the Army per annum in twenty-five trades of one and two years' duration, both in the engineering and non-engineering, fields at the various Industrial Training Institutes in the various States has been approved. During the pre-release training period, the entire expenditure is borne by the Government of India from the Defence Budget while during the post-release training period, they have to bear the expenses themselves with financial assistance from the States who have been requested to give them a stipend of Rs. 100/- per month, either out of the Welfare Funds with them, which are meant for ex-Servicemen, or from the State Budgets. During the entire period of training at the Industrial Training Institutes, these trainees are provided free accommodation, if available, in the Industrial Training Institutes' Hostels ; otherwise they are attached during the pre-release training period to a nearby Army unit. After release, they have to find accommodation for themselves. Some other pre-release and post-release training schemes have also been planned for giving training in heavy earth moving equipment, bee-keeping, cattle management, farm machinery utilisation, animal husbandry, poultry farming, dairying, teachers' training, training as Gram Sewaks and physical training instruction. (d) DGR watches the progress of the employment of ex-Servicemen in Government, semi-Government and private organisations. The Central Government have decided to continue upto July 1974, the reservation of 10% of Class III posts and 20% of Class IV posts in all Central Government departments for released service men. The orders relating to relaxation of age and educational qualifications continue. The reservation of a certain percentage of posts recruited directly by the UPSC to Class I and Class II appoint-

ments, made initially for ECO's continue in favour of ECOs and SSCOs for a further period upto January 1974. A certain number of unreserved vacancies are filled from amongst candidates belonging to categories like displaced persons, retrenched Central Government employees etc. Ex-Servicemen are also eligible for appointment in these posts. (e) State Governments have been persuaded to reserve a percentage of vacancies for ex-Servicemen. Except for Assam, J&K, Kerala, Tamil Nadu, U. P. and Nagaland, all States have made a start. A directive has been issued by the Bureau of Public Enterprises to all Central Public Sector undertakings to implement the Government policy of reservation of vacancies for ex-Servicemen. It has also been agreed that, in respect of ex-Servicemen, Directorate General of Resettlement will have the authority to sponsor ex-Servicemen to employers in the same way as Director General of Employment & Training. The Wing in DGR's Organisation, which is responsible for watching the absorption of ex-Servicemen in the different departments, has been strengthened and close liaison with DGE&T is maintained. In order to facilitate the absorption of ex-Servicemen in Para Military Forces, the standards of recruitment adopted by these Forces have been relaxed. The Department has pressed to amend the recruitment rules. An Inter-Ministerial Committee has been set up to watch the progress. (f) Settlement on agricultural land has continued to be very popular with ex-Servicemen. Efforts have been continuing to persuade State Governments to establish ex-Servicemen's land colonies. The reclamation of more land in Arunachal Pradesh and Andaman & Nicobar Islands has been carried out to induct more ex-Servicemen's families. A plan to reclaim certain areas in Rajasthan and Madhya Pradesh, primarily for settlement of ex-Servicemen, has been under consideration of the Defence Ministry in consultation with the Planning Commission and the State Governments. Surplus military lands, wherever available for agricultural purposes, have been offered on lease to ex-Servicemen and their societies. (g) The Ministry of Food and Agriculture have reserved a quota of imported tractors for allotment to Service and ex-Service personnel. Indian Oil Corporation have earmarked some more stations for disabled ex-Servicemen and war widows for allotment of Indian Gas Agencies. (h) The scope of settlement of ex-Servicemen on land having become limited and the employment opportunities in Government and Semi-Government institutions also not being sufficient, the Government have considered the expansion of the self-employment schemes in various sectors.....agricultural, small scale and ancillary industries, cottage and handloom etc. The feasibility of setting up Servicemen's Co-operatives to undertake small scale manufacture of items for HAL, BEL, BEML and HVF have been explored. The Wing in the Directorate General of Resettlement, dealing with these schemes has been strengthened. Panels consisting of experts—officials and non-officials—have been set up for advising DGR on these schemes to be taken up. (i) In order to assist the Defence Services personnel in constructing houses, Defence Housing Colonies have been formed at various towns. Haryana Government have agreed in principle to establish a Defence Housing Colony at Panchkula (near Kalka), where 3,000 plots are to be provided on 'no-profit, no-loss' basis. Approximately, one hundred and eighty-six plots in the Low and Middle Income Group Housing Schemes (upto 200 sq. yds.) have been reserved in the Delhi Development Authority housing schemes for allotment to Defence Services personnel. In Gujarat, Haryana, Tamil Nadu, Mysore and Uttar Pradesh, 1,208 flats/plots of various sizes have been made available for allotment to Defence Services personnel during the period. (j) All possible efforts to rehabilitate and

resettle ex-Servicemen, who are disabled while in service, and are invalided out have been made. All Servicemen, who sustained injury, while on duty, are entitled to medical treatment in Military Hospitals for as long as it is considered necessary. If patient requires any specialist treatment in civil hospitals, like All India Institute of Medical Sciences, Cancer Institutes, etc., treatment is arranged by Government. In some cases, treatment abroad is also arranged. If amputation becomes inescapable, ex-Servicemen are fitted with artificial limbs at the Artificial Limb Centre, Poona. All expenses connected therewith (including the cost of artificial limbs) are borne by the Government. (k) Vocational training for disabled Service personnel has been arranged at the various industrial/technical institutes in the States, at which seats have been reserved for them. If their educational qualifications are not adequate for admission to these institutions, facilities are provided in various institutions like Queen Mary's Technical Institute, Kirkee, Red Cross Home, Bangalore and St. Dunstan's Home, Dehra Dun. If any ex-Serviceman is so disabled that he cannot look after himself and the family is not in a position to take care of him, he is admitted to the Red Cross Home for paraplegics established at Bangalore. This Home is run by the Indian Red Cross. However practically all expenses are met out of Defence Budget or funds arranged by the Ministry of Defence. Another Home is proposed to be established in the North. The "Cheshire Home" Organisation has offered to take care of 55 ex-Servicemen who are paraplegic cases. (l) Pension awards have been enhanced and the conditions for their grant liberalised. The liberalised pensionary awards have been extended to the casualties of the earlier wars, but with effect from 1-2-1972. Under the Scheme, the widow of an officer killed in action is entitled to receive special family pension at 3/4ths of the basic pay last drawn by the officer, upto the deemed date of his retirement, i.e., the age of 55 years, in the case of Colonel and above, and 5 years in the case of other Commissioned Officers (including Emergency and Short Service Commissioned Officers), or for period of 7 years, whichever is later. Thereafter, special family pension is payable at the rate of the normal retiring pension of the rank held by the officer at the time of his death, reckoning service upto the deemed date of retirement. With the special family pension at the latter rate, children allowance at the rate of Rs. 100/- p.m. per child upto the age of 23 years, will be payable subject to certain ceiling limits. In the case of JCOs and ORs, the special family pension is intended for the sustenance of the family. To the nominated heir of a JCO/OR killed in action, special family pension is payable, till death or disqualification, at the rate of pay drawn by the deceased at the time of death. Thus the widow of a Sepoy drawing total pay of Rs. 137/- at the time of death will continue to draw this amount as pension for her life as against Rs. 62/- admissible under the existing rules applicable to death in conditions attributable to service. Under the rules, the widow of an officer, on re-marriage, forfeits her right to the special family pensionary awards. Under the Special Scheme, on remarriage, she is entitled to a pension equal in amount to the ordinary family pension as though the officer had died in normal circumstances. In the case of a JCO/an OR, if a widow re-marries her deceased husband's brother and continues to live communal life with him and/or contributes to the support of the other eligible heirs, she continues to be eligible to the special family pension. In other cases, under the rules, on remarriage, the widow of a JCO or OR forfeits her right to the special family pension, but under the Special Scheme, she is entitled to pension equal in amount to the ordinary family pension as though the JCO/OR had died in normal circumstances. The conditions for the grant of dependant

pension and the rates of children allowance and family gratuity have been liberalised. (m) A Central Organisation has been set up in the Ministry of Defence to formulate practical Schemes, to co-ordinate them in consultation with other Central Government Departments, States and private organisations and ensure optimum utilisation of the available resources for the welfare of the families of those who died in defence of the country and those who became disabled in the conflict. The Special Organisation is headed by a specially selected senior officer. He functions under a Managing Committee to be constituted under the chairmanship of the Defence Minister. The organisation is intended to mobilise donations in cash and kind given by the State Governments, Associations and individuals and seek funds from Prime Minister's National Defence Fund and Prime Minister's National Relief Fund. It is also to ensure that the benefits under the Scheme are distributed in a fair, equitable and rational manner and with desired speed. According to the plans under consideration, this Organisation will evolve a programme for the grant of benefits in the following spheres :—

(i) Construction of low-cost houses and flats for allotment to war widows on ownership basis ; grant of land and loan for house building ; sanction of a house rent subsidy in special cases of hardship, for a limited period ; (ii) Vocational training for war widows and war disabled Servicemen to enable them to obtain gainful employment ; (iii) Placement of disabled Servicemen and members of the family of the deceased Servicemen in vacancies reserved for them in Government Departments ; (iv) Education of children : Orders have already been issued by the Union Ministry of Education, exempting those who are studying in, and those who will be admitted, to, educational institutions under them or financed by them from payment of tuition and other fees, hostel charges for those studying in boarding schools and colleges, cost of books and stationery, as well as of uniform where it is compulsory, upto the first degree course. (n) The scope for employment of disabled Servicemen, irrespective of the circumstances in which disablement was sustained has been expanded. Following concessions have been sanctioned for them : (a) Medical standards have been relaxed for recruitment to reserved Class III and Class IV posts in Central Government offices, they are given overriding priority over other ex-Servicemen ; (b) Educational qualifications are relaxed at the discretion of the appointing authority, provided the disability does not interfere with the discharge of the duties attached to the post and (c) Relaxation in age limit upto three years is given for appointment to posts which are filled through competitive examinations conducted by the Union Public Services Commission. After the Indo-Pak Conflict of 1965, a Special Cell was created in the Directorate General of Resettlement to attend exclusively to the problems of rehabilitation of disabled ex-Servicemen of 1962 and 1965 operations. (d) To orientate retiring/retired officers to the needs of civil employment, training courses are arranged covering such fields as business management, personnel management, industrial engineering, farming and agriculture, export techniques and so on. Officers, who attend these courses, are required to contribute to the training fees and the balance is met by the Government from the funds meant for the purposes. Such training courses have been arranged with the University of Delhi, Agricultural Universities at Ludhiana and Pantnagar, Productivity Council and Management Associations in various States, National Institute for Training in Industrial Engineering, the Small Industries Service Institutes and Indian Institute of Management. Officers are also encouraged to take advantage of correspondence courses in management with reputable institutions and in the evening programmes con-

ducted by Small Industries Service Institutes and other professional bodies who charge concessional fees in the case of Defence Services Personnel.

SERVICES SPORTS CONTROL BOARD:—The Board is responsible for conducting and co-ordinating various sports in the three Services. Normally, the sports season commences from the month of August/September every year. All the schedules of sports chalked out for 1971-72 were suspended due to the situation prevailing then. However, the Services Championships were organised for aquatics, basketball, cross country running and volley ball. The Services teams annexed National Titles in aquatics, boxing, athletics, including cross country races, gymnastics and wrestling (all the three styles). The Services teams, however, lost in semi-final in hockey and quarterfinal in football. Some of the football players from the Services were selected for the Indian team which participated in the Second D Jakarta Anniversary Tournament (June 1971). and Merdeka Football Tournament (August 1971). Two squash players from the Services represented the Indian team which participated in the World Squash Rackets Championships held in New Zealand during July/August 1971. An athlete from the Services underwent a Study-cum-Training Course held at the West German Athletic Association and Academy of Sports at Colonge from July to September 1971. The Indian Boxing Team, consisting of two officials and boxers, for the 5th Asian Boxing Championship held at Tehran (Iran) from August 27, to September 1, 1971, was made up of the members of the Services. The Team won two gold medals for India. One shooter from the Services participated in the Asian Shooting Championship at Seoul (Korea) from October 17 to 26, 1971 as a member of the Indian Shooting Team. Two Services players were in the Indian Basketball team which participated in the 6th Asian Basketball Championship held at Tokyo from October 30, 1971 to November 8, 1971.

WITH BEST COMPLIMENTS

TO ALL OFFICERS AND JAWANS OF OUR GALLANT
ARMED FORCES

FROM THE HOUSE OF DENDRITE ADHESIVE

**Chandras' Chemical Enterprises
Private Limited**

(P. C. CHANDRA GROUP OF INDUSTRIES)

P-24, C.I.T. Road, Calcutta-14

PHONE : 24-7032, 24-2760

GRAM : "DENDRITE"

MAKERS OF 18 DIFFERENT TYPES OF ADHESIVES

BRANCH OFFICES

118, Himalaya House (1st Floor)
Palton Road, Bombay-1.
Phones : 26-3339, 26-7021

1/38, Vepery High Road,
Periamet, Madras-3.
Phone : 31712

3778, Netaji Subhas Marg,
Faiz Bazar, Delhi-6.
Phone : 273342

**THE
TIME TESTED KEY TO
SUCCESSFUL AND VICTORIOUS WARFARE**

**DEFENCE PRODUCTION ON
WAR FOOTING DURING PEACE**

PRODUCTION OF DOUBLE-LIFE

**PRECISION AUTO PARTS HAS ALL ALONG
BEEN ON WAR FOOTING AND HAS MET MASSIVE
AND MOST SOPHISTICATED REQUIREMENTS
OF THE DEFENCE FORCES AND THE CIVILIAN
TRANSPORT SYSTEM.**

**WHATEVER OUR ACHIEVEMENTS IN THE PAST,
WE PLEDGE TO BE-DOUBLE OUR EFFORT**

Automobile & Agricultural Industries Corporation

MANI BHAVAN, FRENCH BRIDGE, BOMBAY-4.

PHONE: 354579

GRAMS: "REACHROD"

FACTORY: POISAR

PHONE: 661173

AUTHORISED REPRESENTATIVES

- **MADRAS MOTORS AUTO SERVICE PVT. LTD.,**
37, Mount Road, Madras-6.
- **HOWRAH FOR MOTOR CO. PVT., LTD.,**
P. 6 Mission Road, Extension Calcutta-1.
- **NARINJANALAL RAMCHANDRA,**
158, Partabpura, Agra.
- **AND MANY OTHERS**

WRITE TO US IF YOU WISH TO JOIN

INDIAN ARMY

INDIAN army is the oldest and the senior most Service in the country. On account of international compulsions, India has been forced to maintain a large army of over eight lakhs. It ranks among the four largest armies of the world. Ever since 1964, the overall sanctioned strength of the Army has remained at 8.28 lakhs, all ranks. However, in the years following 1964, the fighting capability has increased from 21-25 division force. A survey of the role played by the Army since independence has amply emphasised its vital importance in, both national survival and national developments. Despite several handicaps, the Army has performed a truly remarkable role since independence in the spheres of national integration, national stability, national defence and international peace. Its crowning performance has been during the Fourteen Day War against Pakistan for the liberation of BANGLA DESH. While committed to action in these roles, the Army has preserved the highest traditions of discipline and devotion, maintaining complete political neutrality, which is the sine qua non for the nation's democratic growth. From all reckonings, the Army will continue to remain the most effective instrument of the nation's will in the coming future.

ARMY HEADQUARTERS :—The Executive Head at the Army Headquarters is the Chief of the Army Staff. He is assisted by the Vice-Chief of the Army Staff and four Principal Staff Officers. The Deputy Chief of the Army Staff, the Adjutant General, The Quarter Master General and the Master General of the Ordnance. Apart and aside of these officers, there are two Heads of Branches. . . . the Military Secretary and the Engineer-in-Chief. As at present, following are the Branches at the Army Headquarters, and the Directorates under them.

THE GENERAL STAFF BRANCH : The Branch is split up into two main sections. One is under the Vice-Chief of the Army Staff and the other under the Deputy Chief of the Army Staff. Organisation and development of the Army, military operations, intelligence, military training and education, combat development, military survey, including maintenance and supply of maps and plans and Engineer Staff matters are dealt with by the Vice-Chief of the Army Staff. Staff Duties, selection and scale of weapons and equipment, inter-communication services, co-ordination of policy regarding equipment including provisioning, training and equipment of all Armoured Corps units, Artillery units, advice and suggestions on Infantry matters, Territorial Army and Defence Security Corps fall under the jurisdiction of the Deputy Chief of the Army Staff. The Directorates under the Vice-Chief of the Army Staff are : (a) Directorate of Military Operations, (b) Directorate of Military Intelligence; (c) Directorate of Military Training, Directorate of Combat Development, Directorate of Military Survey and Directorate of Signal Intelligence. The Directorates under the Deputy Chief of Army Staff are; (a) Directorate of Staff Duties, (b) Directorate of Weapons and Equipment, (c) Directorate of Armoured Corps (d) Directorate of Artillery, (e) Signal Officer-in-Chief, (f) Inspector of Infantry, (g) Directorate of Territorial Army, (h) Directorate of Defence Security Corps. **ADJUTANT GENERAL'S BRANCH :—**At the Head of this Branch is the Adjutant General. He is assisted by Deputy Adjutant General. The Branch looks after all matters relating to manpower, recruitment, leave, pay and allowances and pensions and other con-

ditions of service, discipline and ceremonial. It also deals with welfare and health and military Law. The Directorates under the Branch are :—(a) Directorate of Organisation, (b) Directorate of Personal Services, (c) Judge Advocate General, (d) Provost Marshal, and (e) Directorate of Army Statistical Organisation. **QUARTER MASTER GENERAL'S BRANCH** :—At the Head of the Branch is the Quarter Master General. He is assisted by Deputy Quarter Master General. The Branch is responsible for movement of personnel, stores and equipment, provision, storage, inspection and issue of fuel, food stuffs and forage, works policy, military farms, remount and veterinary services, Army Postal, Pioneer and Canteen Services, Fire Fighting Services and technical examination of MES works and bills. The Directorates under the Branch are:—(a) Brigadier (Ops Plans), (b) Directorate of Movements, (c) Directorate of Quartering, (d) Directorate of Supplies and Transport, (e) Directorate of Remounts and Veterinary Services, (f) Directorate of Military Farms, (g) Directorate of Army Postal Services, (h) Directorate of Pioneers, (i) Chief Canteens Officer, and (j) Chief Technical Examiner of Works. **MASTER GENERAL OF THE ORDNANCE BRANCH** :—At the Head of this Branch is the Master General of the Ordnance. He is assisted by Deputy Master General of the Ordnance. The Branch is responsible for all aspects of procurement policy, provision, storage, recovery, repair, maintenance and issue of all stores and equipment of Ordnance Supply, including MT vehicles, armaments and ammunition, signal equipment, general stores and clothing as well as supply of common user items to the Navy and the Air Force. The Directorates under the Branch are:— (a) Directorate of Ordnance Services, (b) Directorate of Electrical and Mechanical Engineering, (c) Colonel Procurement Progressing Organisation. **MILITARY SECRETARY'S BRANCH** :—At the Head of this Branch is the Military Secretary who is assisted by two Deputy Military Secretaries. The Branch is responsible for the issue of Commissions in the Army, postings, transfers, promotions, release, retirements, resignations, invalidments and regular reserve of all non-Medical officers of the Army, provision of Secretariate for the Selection Boards which recommend officers for promotion to the rank of Lt. Col. and above, recommendations for the grant of honours and awards to Army Officers and Honorary Commissions in the Army to Civilians. **ENGINEER-IN CHIEF'S BRANCH**:—At the Head of this Branch is the Engineer-in-Chief. This Branch is responsible for all matters relating to Engineer units, including Transportation, Bomb Disposal and Mine clearing and Engineer stores, administration of the personnel of the Corps of Engineers and the MES, designs, provision, construction and maintenance of all accommodation and work for the Defence Services, works study of specific projects and cantonments planning. The Directorates under the Branch are:— (a) Brigadier Engineer Staff, (b) Directorate of Personnel, (c) Directorate General of Works, (d) Directorate of Engineer Stores and Plant.

STATIC COMMANDS :—Hitherto the Army was organised into four Commands.....The Western Command, the Eastern Command, the Central Command and the Southern Command. A fifth command, the Northern Command has now been added to the organisational set up of the Army under Army Headquarters. Field Formations are allocated to these commands based on the assessment carried out by the Army Headquarters, keeping in view the operational commitments. Each Command is headed by the General Officer Commanding-in-Chief (also known as the Army Commander) holding the rank of Lt. General.

Each Command is further sub-divided into Areas, Independent Sub-Areas and Sub-Areas. Each Area is under the Command of a General Officer Commanding holding the rank of Major General. Each Independent Sub-Area and Sub-Area is commanded by an officer holding the rank of a Brigadier. In view of the fact that the Uttar Pradesh Area was unwieldy and did not permit rationalising the work load of the Areas in the Central Command and did not facilitate better control over the logistic set up, a new Allahabad Sub-Area has been carved out of the old Uttar Pradesh Area and has been placed under the Madhya Pradesh Area, which has now been redesignated as Madhya Pradesh, Bihar and Orissa Area. The old Jabalpur Sub-Area has been redesignated as Madhya Pradesh Sub-Area with Headquarters at Bhopal. All these are static formations Headquarters. However, each Command Headquarters can form a Mobile Tactical Headquarters for exercising operational control over its mobile formations. The mobile formations consist of Corps, Divisions, Brigade Groups, Independent Brigades and Brigades. A Corps Headquarters is placed under a Command Headquarters to command two or more Divisions, or a combinations of Divisions, Brigade Groups and Independent Brigades. A Corps Commander holds the rank of Lt. General, Division Commander of Major General and Brigade Commander of Brigadier.

MANPOWER STRENGTH AND ORGANISATION :—This citation excludes fresh raisings, weapons and equipment, preparatory to Fourteen-Day War against Pakistan in December, '71. This also excludes the Territorial Army and the Border Security Forces which are separately mentioned under (second line of Defence). Army 860,000 personnel. This force is organised into one armoured division ; two independent armoured brigades ; thirteen infantry divisions ; ten mountain divisions ; six independent infantry brigades ; two parachute brigades ; about twenty AA artillery units ; 200 Centurian/Mk 5/7 ; 250 Sherman, 450 T-54 and T-55 and 300 AMX-13 light tanks ; OT-62 and Mk 2/4A armoured personnel carriers ; about 3,000 artillery pieces, mostly twenty-five pounders, but including about 350 100-mm and 140 130-mm guns ; and SS-11 and Entac antitank guided weapons.

ARMS AND SERVICES :—As at present, the Army has the following arms and Services. Never lacking in efficiency and effectiveness, the Arms and Services have set up records of performance in the Fourteen-Day War against Pakistan which rank them among the very best in the world. As at present, the Army has the following important arms: (a) **Infantry** to which, as usual, is assigned the task of using initiative and intelligence at every step and in every action on the field of battle. (b) **Cavalry (Armour)** to which is assigned the task of providing mobility and striking power. (c) **Artillery** to which, as usual, is assigned the task of dominating the battlefield with fire and, when acting in conjunction with sea and air forces, assist the infantry and armour to achieve their objective in the field of operations. As at present, artillery units are organised on Corps and Divisional basis (d) **Engineers** : The objective of the Corps of Engineers has always been, and continues to be, to provide engineering skill and resources for the furtherance of the Commander's plan. The personnel of this Arm are still called 'Sappers' though units are known as 'Engineers.' (e) **Signals** whose task has always been and continues to be to provide the life line of communications of all sorts. It is this Arm which enables the commanders to exercise their command and control over

their troops, howsoever, widely dispersed during modern fast moving operations. Each Arm has its own Regimental Centres and Training Establishments located in various parts of the country. **Defence Security Corps:**—As at present, following are the important Services: (a) **Army Service Corps (ASC):**—It is the largest and the senior most formation. It performs the essential functions of feeding and transporting the Army personnel. As at present, this Service is organised in three main branches: Supplies, Transport and P. O. L. (Army terms for Petroleum, Oils and Lubricants). The Service has a network of depots established in various parts of the country. (b) **Army Ordnance Corps (AOC):**—It is another vast organisation stretching from the base to the front lines. It is responsible for equipping all units according to the scales laid down for each one of them, providing receipt, storage and issue of all Ordnance stores, minor repairs and replacement of all Ordnance stores; when they are rendered unserviceable or are lost in action, supply of spare parts to keep all warlike stores in use and collection of salvage. The Service has a network of depots, central, advance base and vehicle, located in various parts of the country. (c) **Corps of Electrical and Mechanical Engineers:**—It is responsible for repair and inspection of all mechanical, electrical and optical equipment of the Army and such items of equipment of the Navy and Air Force as are of common to the three Services: **Army Medical Corps.** It is responsible for the health and physical fitness of the Army personnel. The Corps has its own Research and Development Section to keep itself abreast of all advances in the field of medicine. It operates through a network of military hospitals established in various parts of the country. (d) **Remounts, Veterinary and Farms Corps:**—It is responsible for providing animal transport to the Army and for looking after the equipment and health and fitness of the animals in Service. (e) **Corps of Military Police.** Its task is to assist the Army in the maintenance of good order and discipline and prevent, as far as possible, breaches of rules and orders by the Army personnel. (f) **Education Corps:**—Its task is to provide educational staff for organising, directing, supervising and examining the educational training of the Army personnel.

RECRUITMENT, TRAINING ETC.:—An answer to the complex of defence in the Hamalyan terrain has been found in the newly raised Mountain Divisions. Soon after the Chinese invasion, six additional Divisions were sanctioned. Of these, four were to be raised as Mountain Divisions and the remaining two as standard infantry divisions. Apart from the new Divisions, some existing divisions were also converted into Mountain Divisions. There were many problems of defence in the high mountainous regions, with altitudes ranging from 5,000 ft. They ranged from the problems of human survival, mental isolation and loneliness, food and clothing, weapons and equipment, medical care and casualty evacuation, communication and transport etc. These problems have since been understood in the context of the terrain and climate in which the troops would have to operate, and they have since been successfully solved.

To meet the rapid expansion, Emergency Commissions were instituted in November, 1962. Nearly ten thousand officers were recruited to meet the needs. This met the needs of the Army under expansion. However, despite all the efforts and incentives, recruitment to the technical Corps of the Army, like the Corps of Engineers, Signals, Electrical and Mechanical Engineers and the Army Medical Corps has continued to be unsatisfactory. To facilitate the recruitment of engi-

neers and medical officers, a University Entry Scheme has been evolved. Under this scheme, Short Service Regular Commissions are granted to the candidates studying in the final year of the degree classes engineering and medical colleges. In case of engineers and doctors, already employed in the Central Government and offering to join the Army, their lien seniority, civil pay and emoluments and other service benefits in the parent organisation, are fully respected.

To meet the growing needs of training, the existing institutions have been expanded and new ones have been opened. An important aspect of officer training, which has received greater emphasis, has been the cultivation of an intimate 'officer-jawan relationship.' In the light of the experience gained in the Indo-Pakistan conflict of 1965, battle inoculation training has been introduced. Additional courses of training have also been introduced. The Infantry School, Mhow, has been bifurcated into Infantry School and a College of Combat. The College of Combat, apart from conducting the existing Junior Commanders Course and Senior Officers Course, imparts instruction in a new course designated 'High Command Course.' The Infantry School has introduced a new course specially designed to help young infantry officers in the administration and tactical handling of rifle platoons in co-operation with other arms. Training is also given in commando operations. A tank technology course has been introduced in the Armoured Corps Centre and School at Ahmednagar. A Young Officers Course has been introduced for Short Service Commissioned Officers. Another new course introduced has been the Battalion Support Weapons Course. The training capacity of the High Altitude Warfare School, which was opened in March, 1962, has been stepped up. Jungle warfare training is imparted by mobile teams at different units of the Army. A new school to train jawans in counter insurgency activities has been opened. To improve arrangements for imparting education to JCOs, NCOs and ORs, a scheme of self-contained education centres was introduced in 1967. 13 such centres are functioning at present. The Army Education Corps School and Centre at Pachmari has been upgraded to the status of a College. The various technical training instructions of the Army have also been upgraded. There is a college for training tele-communication engineers of the Corps of Signals and a College for training Electrical and Mechanical Engineers. A few selected officers are also sent abroad for advanced training in special subjects for which facilities do not still exist in the country.

Other organisational and training changes introduced have included the expansion and strengthening of the Intelligence Directorate. The rank of the Director has been upgraded to Lt. General. Directorate of Combat Training has been set up to consider and formulate future technical concepts and indicate how organisations and material should be developed to meet the changed concepts of warfare. The Directorate of Infantry, which was functioning in an advisory capacity, has been converted into an Inspectorate of Infantry under a Major General with executive and co-ordinating powers. Under the Master General of Ordnance, a new organisation called the Procurement and Progressing Organisation has been formed for the procurement of equipment and stores from foreign countries.

HERE IS YOUR MUST ... BOOK YOUR COPY NOW
"Distinguished Soldier Sons of India"

Price Rs. 50/- Postage: Rs. 8/-

With Our Best Compliments

TO
ALL OFFICERS
AND MEN OF
ARMED FORCES
AND
AUXILIARY ARMS.

●

International Shipwrights

Dubash Chambers, Kumpta Street, Bombay 2.

Phone: 262216

89, P. D'Mello Road, Bombay-9.

Phone: 323126—338714

Port Trust Contractors

INDIAN NAVY

PRIOR to 1947, Indian Ocean was a 'British Lake.' Under the circumstances, therefore, the Maritime defence of India was the responsibility of the Royal Navy. Unlike the Indian Army, the small Indian Navy was not delegated any significant portion of this maritime defence. The responsibility being limited to the local naval defence of major harbours and ports, with small craft and ancillaries, the ships and the manpower were tailored to meet this requirement only. Unfortunately, effective with the dawn of independence, this small force was further truncated by the fact of partition of assets between India and the new born state of Pakistan. All that was left with India were a few frigates and minesweepers. Most of the training facilities which had been developed under the British, were located at Karachi. They also went over to Pakistan. The manpower strength, which had already been considerably reduced since the end of the War in 1945, also suffered a further set-back by the fact of partition. However, with effect of the dawn of independence, the maritime defence of India became the responsibility of the Indian Navy. Overnight, the role of the Indian Navy was changed from limited local defence to an all embracing role of a comprehensive maritime defence of India.

NAVAL PLAN...1948 :—In the light of the changed role of the Navy, the Government of India in 1948 decided on a Naval Plan of development and expansion to create an ocean going navy, capable of meeting the new maritime commitments. With the experience of a major war just behind, the naval planners aimed at a balanced fleet that would comprise varied weapon systems which would permit effective exercise of control on the surface of the sea, beneath the surface and in the air. Described in terms of hardware, the strength was to comprise : (a) The surface instrument consisting of gun-missile ships i.e. cruisers, destroyers, frigates (b) The underwater instrument consisting of submarines and anti-submarine ships and aircraft and (c) The air instrument consisting of carriers borne and shore based maritime aircraft. Of the said elements, the pre-independence Navy had some experience in surface ships, but little or none at all, in naval aviation and submarine arm. It was, therefore, decided to first develop training facilities, both ashore and afloat. The aim was to have an all through training for officers and sailors until they could become useful members of the crew of the men-of-war, existing and to be acquired. The creation of the training facilities ashore was a gigantic task. This, however, was accepted in the interests of the long term gains. The establishment of training complexes at Cochin, Jamnagar and Lonavla was achieved within a short period of seven years. It could be claimed that the aim of the total training, as far as surface ships were concerned, was achieved by 1955. Although, it was accepted that the Navy would have an aviation element quite early, the training in carrier borne aviation, however, was rather gradual.

EXPANSION OF THE FLEET :—The expansion of the surface fleet was also begun in 1948. Between 1948 and 1953, INS DELHI and six world war II destroyers were acquired from the United Kingdom and with this the task of naval training afloat was completed. The next phase of expansion began with the acquisition of INS MYSORE. This phase was completed in 1963. During this period, INS VIRKANT and eight new construction frigates were acquired from the United Kingdom. By the early sixties, the Indian Navy reached a stage when the operational and training ships could be formed into two separate entities.

Operationally, the acquisition of the aircraft carrier added a new dimension to the fleet. With Sea Hawks, as the strike element, and the Alizes, as the anti-submarine and recon aircraft embarked on board, the offensive capabilities of the fleet were released from the limitation of the range of the heaviest gun installed on board. The four to five years following the Chinese aggression in 1962, were lean years for the Navy. However, by about 1967, the Naval planners could once again see their way clear for the next phase of the modernisation of the fleet. The need for a suitable fast tanker with sufficient fuel capacity at the high seas had been felt. This was met with the acquisition of INS DEEPAK, a fast replenishment ship. It extended the endurance and availability of the fleet ships. With the acquisition of DEEPAK, the fleet, which had already become sea-going, became truly oceanic. The thoughts were then turned to the development of the undersea arm. The first submarine was acquired in 1968. The programme of the acquisition of the first squadron was completed in 1970. With this acquisition, the concept of the balanced fleet became a reality and the Service became truly tri-dimensional. In the field of anti-submarine warfare, the latest addition to the fleet was the Indian built, INS NILGRIS, the most modern and most sophisticated frigate (See also Defence Production.) Satisfactory though, the achievements have been hitherto, yet the Navy of the eighties is visualised to have much wider horizons, both in size and technology. New weapon systems, new techniques of propulsion and construction, all are seen to have a revolutionary impact on the Navy's meeting its classical roles. New tactics and new ideas in strategy, it is conceded, will have to be developed and evolved. All this will make the task of developing Navy of the future an exciting and rewarding venture, and the one that would pay handsome dividend in the coming future. The Naval planners are full of robust faith and confidence that the future will be satisfactory better and brighter.

With

The

Best

Compliments

of

The Ripon Road Iron Foundry

Proprietor :

KASSUM KESHAVJI

Lamington Road (North),
Opp. Agripada Police Station,
BOMBAY-II. Tele : 373988

MANUFACTURERS OF :

- IRON PLOUGHS APPROVED BY THE GOVT. OF MAHARASHTRA, ■ C. I. VEE BELT, ■ PULLEYS, ■ C. I. AND CAST STEEL REFRIGERATION VALVES, ■ C. I. METRIC WEIGHTS AND OTHERS

NAVAL HEADQUARTERS

THE Executive Head at the Naval Headquarters is the **Chief of the Naval Staff**. He is assisted by five Principal Staff Officers whose main functions are : (1) **The Vice-Chief of the Naval Staff** : He is responsible for operations, plans, weapons, policy and tactics, naval intelligence, naval communications, hydrography, work study and Naval Secretariat, including supply of publications. The Directorates under him are :—(a) Directorate of Naval Operations, (b) Directorate of Naval Plans, (c) Directorate of Weapons, Policy and Tactics, (d) Directorate of Naval Intelligence, (e) Directorate of Naval Signals and (f) The Naval Secretary (2) **Chief of Personnel** : He is responsible for recruitment, terms and conditions of service, training, welfare and discipline of all service personnel in the Navy, education, medical statistics and legal affairs of the Navy. The Directorates under him are : (a) Directorate of Training, (b) Directorate of Medical Services (Navy), (c) Directorate of Naval Education and (d) Judge Advocate General. (3) **Chief of Logistics** : He is responsible for works projects, all matters pertaining to the Supply Branch, including pay, pension and allowances of the Service Personnel, victualling and clothing ; naval armament supply, naval supply, naval stores, terms and conditions of service, welfare and discipline of all civilian personnel in the Navy. The Directorates under him are :—(a) Directorate of Civilian Personnel, (b) Directorate of Stores, (c) Directorate of Armament Supply, (d) Directorate of Supply Branch, (e) Directorate of Clothing and Victualling (f) Directorate of Civil Engineering. (4) **Chief of Material** :—He is responsible for provision, construction and maintenance of ships, weapons and equipment, naval dockyards and naval armament inspection organisation, marine and electrical engineering. The Directorates under him are :—(a) Directorate of Naval Designing, (b) Directorate of Naval Construction, (c) Directorate of Fleet Maintenance, (d) Directorate of Weapons and Equipment, (e) Directorate of Marine Engineering, (f) Directorate of Electrical Engineering, (g) Directorate of Naval Armament Inspection, (h) Directorate of Leander Project. (5) **The Assistant Chief of the Naval Staff**. He is responsible for all Naval air and submarine arm matters, including their policy, operations, staff and material aspects and functional control over the training and administration of such units, meteorology and acquisition projects. The Directorates under him are :—(a) Directorates of Air Staff Division, (b) Directorate of Naval Air Material, (c) Directorate of Submarine Arm, (d) Directorate of Acquisition Project, (e) Directorate of Meteorology.

With The Best Compliments From :-



SHROFF AUTOMOBILES

MODY CHAMBERS, FRENCH BRIDGE, BOMBAY-4.

DISTRIBUTORS FOR WESTERN ZONE :-

● PIONEER ● OIL SEALS ● "SPELLS" CYLINDER LINERS ● SUPERB
QUALITY AUTOMOTIVE PARTS :

Phone : 352630 382375

Gram : FAIR FORM

ADMINISTRATIVE AUTHORITIES :—The Chief of the Naval Staff exercises his command through : (a) **Flag Officer Commanding-in-Chief Western Naval Command, Bombay** who controls all ships and shore establishments of the Navy situated in or near Bombay, including those at Okha, Jamnagar, and Lonavala. He is also responsible for the administrative and operational control of all the ships based on Bombay. Under him, he has **Flag Officer Commanding, Western Fleet**, who exercises operational control over ships of the Western Fleet, (b) **The Flag Officer Commanding-in-Chief, Eastern Naval Command, Vishakhapatnam**, is responsible for all shore establishments in Vishakhapatnam, Calcutta, Andamans and Nicobars and Madras. He also controls the ships based on Vishakhapatnam. Under him, the operational control of the ships of Eastern Fleets, is vested in the **Flag Officer Commanding Eastern Fleet**. (c) **The Flag Officer Commanding, Southern Naval Area, Cochin**, is responsible for all shore establishments, including Coimbatore and Goa, together with the ships and aircraft based thereon.

SHIPS AND MAN POWER STRENGTH :—(This citation excludes the developments, if any, in preparation to and in the wake of the War for the liberation of Bangla Desh) 40,000 officers and sailors, One 16,000 ton aircraft carrier ; four submarines (ex-Soviet F-Class) ; two cruisers ; three destroyers ; nine destroyer escorts including five antisubmarine frigates ; three anti-aircraft frigates ; ten patrol boats (four less than 100 tons) ; four coastal minesweepers ; four inshore minesweepers ; one landing ship ; two landing craft ; nine seaward defence boats (six less than 100 tons). The Naval air force includes thirty-five Sea Hawk attack aircraft, twelve Alize maritime patrollers, and two Sea King and ten Allouettes III helicopters. Ten Sea Hawks, five Alizes, and two Allouettes can be carried on the aircraft carrier at one time.

FOR

**ALL YOUR PROBLEMS OF
ENGINE RECONDITIONING**

●
Contact :

JAY MOTOR REPOWERING SERVICE
66-A J. SHANKER SETH ROAD,
Phone :- 355641 — BOMBAY-4 Gram : Pistonring

EXPERTS IN

CYL. REBORING, SLEEVES FITTING, CRANKSHAFTS,
GRINDING — BEARINGS — REMETALLING —
ALL TYPES OF ENGINE RECONDITIONING WORK

SHIPS IN THE INDIAN NAVY

AS ON DEC. 3, 1971

1. **AIRCRAFT CARRIER: INS VIKRANT.** It was acquired from Great Britain in March, 1961. Displacement : 19,500 tons. Length: 700 feet. No. of aircraft : 21. Types of aircraft : Seahawk, jet fighters, Braguet Alize, anti-Submarine aircraft and Allouette sea air rescue helicopter. Angled deck with steam catapult and landing sights. (2) **SUBMARINES : KALVARI, KANDERI, KARANJA and KURSURA.** All "F" Class, having a displacement of 2,300 tons Length : 300 feet. Weapons : 21" torpedoes. (3) **CRUISERS: MYSORE.** (Acquired from Great Britain in August 1957) : Displacement : 11,000 tons. Length : 555 feet and weapons : 6", 4" and 40-mm guns. **DELHI :** Formerly a "Leander" class light cruiser in the Royal Navy. Acquired from Great Britain in July 1948. Displacement : 10,000 tons. Length 545 feet. Weapons : 6", 4", 40-mm and 3 pdr guns. (4) **DESTROYERS : 'R' Class : RAJPUT and RANJIT,** Commissioned in 1949). Displacement: 2,400 tons, Length: 362 feet. Weapons 4.7" and 40-mm guns and 21" torpedoes. These ships constitute the 11th Destroyers Squadron. (b) **"HUNT" CLASS : GANGA, GODAVARI and GOMATI** (Acquired in 1953). Displacement : 1,600 tons. Length : 280 feet. Weapons : 4" and 20-mm guns. (5). **GENERAL, PURPOSE FRIGATES.** "Leander" Class: **NILGIRI and HIMGIRI.** (Himgiri yet to be commissioned). Displacement : 2,800 tons. Length : 372 feet. Aircraft : one helicopter. Weapons 45" guns and anti-submarine mortars. (6) **ANTI-AIRCRAFT FRIGATES "Leopard" Class. : BEAS, BETWA and BRAHMAPUTRA** (Acquired between 1958 and 1960). Displacement : 2,500 tons. Length 340 feet. Weapons : 4.5" and 40-mm guns & anti-submarine mortars. (7) **ANTI-SUBMARINE FRIGATES : (a) "WHITBY" Class. TALWAR and TRISHUL** (Acquired in 1960). Displacement : 2,500 tons. Length : 370 feet. Weapons : 4.5" and 40-mm guns & anti-submarine mortars. (b) **"Blackwood" Class : KIRPAN AND KUTHAR.** (Acquired between 1959 and 1960). Displacement: 1,450 tons. Length : 310 feet. Weapons : 40-mm guns and anti-submarine mortars. (8) **FRIGATES. (a) "KISTNA" Class : KAVERI and KISTNA.** Displacement: 1,900 tons. Length: 300 feet. Weapons: 4" & 40-mm guns & 21" torpedoes. (b) **"PETYA" Class: KADMATT, KAMOTRA, KATCHAL, KAVARATTI and KILTAN.** Displacement: 1200 tons. Length: 263 feet. Weapons: 3" guns and 21" torpedoes. (9) **TRAINING FRIGATE: TIR.** Displacement: 1900 tons. Length : 303 Feet. Weapons: 4", 40-mm and 20-mm guns. It has now been converted to a Midshipman training frigate. (10) **SURVEY SHIPS: (a) DARSHAK:** Displacement : 2,800 tons. Length : 319 feet. Carries one helicopter. (b) **"River" Class : INVESTIGATOR:** Displacement : 1,930 tons. Length : 303 feet. (c) **"SUTLEJ" Class : Jumna and Sutlej.** Displacement : 1750 tons. Length : 293 feet. (11) **OCEAN MINESWEEPERS : "BANGON" Class : KONKAN :** Displacement : 825 tons. Length : 180 feet. Weapons : 2 pdrs and machine guns. (12) **COASTAL MINESWEEPERS: "Ton" Class : CANANORE, GUDDALORE, KAKINADA and KARWAR.** Displacement : 425 tons. Length : 180 feet. Weapons: 40-mm and 20mm guns. (13) **INSHORE MINESWEEPERS: "HAM" Class : BASSEIN, BHATKAL BIMLIPTAN, BULSAR.** Displacement : 170 tons. Length: 107 feet. Weapons : 20-mm guns. (14) **PATROL CRAFT : (a) PANBAN, PANAJI, PANVEL, PULICAT, PURI.** Displacement : 120 tons. Length : 97 feet. (b) **HDML Type: SPC 3110, SPC 3112, SPC 3117, SPC 3118** Displace-

WITH BEST COMPLIMENTS

From :

Gujarat Polythene Industries

86, Sutar Chawl, Ghia Mansion, Zaveri Bazar,
BOMBAY-2.

Phone : 325820
329321

Grams : 'ALKATHENE'

Manufacturers of :

■ POLYTHENE ■ CARBOYS ■ JERRY CANS

Available Capacity :

2½ litres : 5, 10, 20, 30, 40, 50, 80, 100 and 2000 litres.

Also Bottles : Capacity from 5 ml. to 200 ml.

LITERATURE WILL BE SENT ON REQUEST.

WITH

OUR BEST COMPLIMENTS TO

ALL OFFICERS AND MEN OF OUR
GALLANT ARMED FORCES

INDUSTRIAL TRADERS

14, BAKE HOUSE LANE, FORT,
BOMBAY-1.

STOCKISTS :

■ KIRLOSKAR LATHES ■ BHAGSON MILLING MACHINE ■
KERRY & PRAGA DRILLING MACHINE ■ SAGAR ALL GEA-
RED SHAPING MACHINE ■ INDUSTRIAL HACKSAW MA-
CHINE ■ INDUSTRIAL SURFACE GRINDER ■ ADISON
TOOL & CUTTER GRINDER ■ GERMAN DIVIDING &
CIRCULAR TABLE ETC. ETC.

Phone : 250590—253307

Grams : TESTTOOLS

ment; 54 tons. Length 72 feet. Weapons: 20-mm guns. (15) **SEAWARD DEFENCE BOATS**: (a) "Ajay" Class. **ADHAY, AJAI, AJIT, AKSHAY, AMAR**. Displacement: 151 tons, Length: 117 feet. Weapons: 40-mm guns. (b) "SHARDA" Class; **Sharada, Sukanya**. Displacement: 86 tons. Length: 103 feet. Weapons: Small arms. (c) "SAVITRI" Class: **Savitri, Sharayu, Subhadra, Suvarna**. Displacement: 63 tons. Length: 90 feet. Weapons: Small arms. (16) **REPAIRS SHIPS**: **DHARINI**: Displacement: 4,625 tons. Length: 328 feet. (17) **TORPEDO BOATS**: **MTB 1, MTB-2, MTB-3, MTB-4 MTB-5, MTB-6**. Displacement: 150 tons. Length: 131 feet. (18) **LANDING SHIPS**: **MAGAR** (Acquired in 1949): Displacement: 4980 tons. Length: 348 feet. Weapons: 40-mm and 20-mm guns. (b) "POLOCNY" Class: **GHARIAL 1, GULDAR 2, LSMR 3, LSMR 4**. Displacement: 1,000 tons. Length: 246 feet. Weapons: Rockets. (c) **YARD CRAFT**: **LCT 4294**: Displacement: 200 tons. Length: 187 feet. (19) **SUBMARINE TENDER**: **AMBA**: Displacement: 9000 tons. Length: 420 feet. Weapons: 2.3" guns (20) **Oilers**: **Dhakti**: Displacement: 3500 tons, length 323 feet. (b) **Chilka**: **Sambhar**: Displacement: 1530 tons. Length: 202 feet. (c) **DEEPAK**: Fleet replenishment tanker. (21) **TUG**: **HATHI**: Displacement: 668 tons: Length: 148 feet.

TRAINING FACILITIES:—Service training establishments impart training in the handling of the latest type of equipment and weapons with which the ships are fitted. Some of the old training establishments were revamped in 1947 and later expanded. New training centres, with modern equipment have, since been set up. The Premier training establishment is **INS VENDURUTHY** at Cochin, where advanced course in gunnery, navigation, communication, tactics, diving, torpedo and anti-submarine warfare are provided. Adjacent to Venduruthy is **INS GARUDA**, the pioneer air station of the Indian Navy. As the various squadrons of aircraft were formed, steps were taken to set a number of training schools for those personnel at **INS Garuda**. Another training establishment established at Coimbatore is **INS AGRANI**. This is a school for training in leadership for senior sailors. **INS CIRCARS** at Vishakhapatnam is the cradle of the Indian Navy where new entry Boys are put through their paces before they join the Fleet. Technical training of electrical officers and sailors is imparted at the Navy's Electrical Establishment, **INS VALSURA** at Jamnagar. **INS SHIVAJI** at Lonavala is the training establishment of the Engineering Branch of the Navy. Marine Engineering courses are conducted at the **College of Engineering at Lonavala**. **INS KUNJALI** at Bombay performs the vital role of training officers and men of the Regulating Branch and the Central Naval Band. It is also responsible for carrying out provost and security duties. **INS HAMLTA** at Marve is the 'alma mater' of the Supply and Secretariat Branch of the Navy. Here the trained officers and sailors carry out logistic, administrative and catering duties. Frigates '**KRISHN**' '**KAVERI**' AND **TIR** are the training frigates of the Navy where cadets and midshipmen undergo sea training. In order to meet the increased requirements adequately a new **Naval Academy** has been established at Cochin for cadet entry officers. A **Sailors Training Establishment** has been set at Goa for direct entry sailors. There has also been intensification of training of personnel of the Naval garrisons stationed in the Andaman and Nicobar islands.

OUR ONLY AMBITION

**TO BE FAVOURITE OF
OUR GALLANT ARMED FORCES**

**TO HELP PRESERVE IN PRINT
THE HEROIC DEEDS OF THE
SOLDIER SONS OF OUR SOIL
IS OUR ONLY BUSINESS**

FAVOURITE BOOK CLOTH AND PAPER MART

13 MIRZA STREET, BOMBAY-3

Phone : 3 2 6 7 2 0 — Grams : "FAVOURABLE"

**IMPORTERS OF
PAPER AND STRAW-BOARD**

INDIAN AIR FORCE

THE Royal Air Force was first stationed in India in a modest way in 1919, with Headquarters at Ambala. It was only after the recommendations of the Skeen Committee that the decision was taken to form the Indian Air Force. The first six cadets were sent for flying training to Cranwel in 1931. At the same time, the training of technical personnel was started at Karachi (now in Pakistan). On the Officers return to India in early 1933, the Indian Air Force was officially inaugurated on April 1st, with six officers, nine airmen and a flight of out-moded Wapiti aircraft. The pace of development and expansion was rather slow in the pre-war years. The completion of the first squadron remained in the making for seven years. However, during the war the strength rose to ten squadrons. The operational experience gained during the war gave the Air Force personnel great confidence. By the time the war ended, Indian Air Force had experienced operational pilots. The technical staff had also learnt the skills to look after the highly sophisticated aircraft and equipment under field conditions and also the art of improvisation, whenever necessary. Among the distinguished Indian officers during the war were Lt. H.S. Malik, Wg. Cdmr. Majumdar, Squadron Ldr. Mehar Singh (Mehar Baha) and Sqn Ldr. Arjan Singh, who later became the Chief of Indian Air Force.

INDEPENDENCE AND AFTER:—On the eve of independence, the total strength of Indian Air Force stood at nine squadrons. The tenth was still in the process of being raised. Almost all the permanent bases were located in West Punjab and Sind. The fact of partition brought about a further reduction of the aircraft strength. Two of the nine operational squadrons went to Pakistan. The tenth was also divided. All the permanent bases were also lost. However, with this depleted strength, the Indian Air Force was first committed to the evacuation of Refugees from Pakistan. The aircrew flew non-stop and evacuated almost 30,000 men, women and children. The force was then committed to resist the Pakistani aggression in Jammu and Kashmir. The Indian Aircraft landed the troops in Srinagar when Srinagar airport was within the firing range of the raiders. During the Chinese invasion of India in 1962, for reasons best known to the Government, Indian aircraft were committed only to transport and logistic roles. The teeth of the Air Force were tested really only during the Indo-Pakistani conflict of 1965.

Starting from obsolescent piston engine fighter bombers and a small fleet of Dakota aircraft at the time of independence, a new modernisation programme was launched. The success of the effort could be judged from the fact that Indian Air Force merged to the first Air Force in Asia (excluding Asian portions of the USSR) to induct jet aircraft and to plan eventually all jet force. In 1948, Indian Air Force acquired Vampire aircraft from the United Kingdom. This was followed by the acquisition of Toofanis, Mysteres, Hunters, Gnats, HF. 24 (MARUTS), MIG-21 and SU-7 aircraft. Indian planners decided early that the Air Force should be least dependent on aircraft and equipment from abroad. In pursuance of this policy, the plan to develop, design and manufacture HF-24 (MARUT) aircraft was undertaken. Production of Gnats and MIG-21 aircraft was undertaken. A license agreement was signed to produce indigenously improved version of this aircraft. In addition, the project for the manufacture of HS.—748 transport aircraft in replacement of Dakotas was also launched. Helicopters were

introduced into the Air Force in 1954, when Sikersky S-55 and S-62 were acquired. These were later supplemented with BELLS. In pursuance of the policy of indigenous manufacture, the manufacture of Helicopters was also undertaken at Bangalore. Initially, Dakota aircraft were used for communication work and VIP flights. However, they were later supplemented by Viscounts and IL-14s. A few all jet TU-124 were also acquired for this role. The beginning in maritime reconnaissance was made with Super-Constellations and they have continued in service.

The first step taken for re-build up-were to once again raise the strength to ten squadrons. Soon after the Chinese aggression, the Air Force was required to build up to its authorised ceiling of 45 squadrons with training and supporting units and expand further, resources permitting. As at present, the Indian Air Force is well balanced 45 squadron force consisting of interceptors, fighter bombers, logistic, communication maritime elements. Ranking among the most important and versatile Air Forces of the world, it has covered itself with undying and matchless glory and renown in the historic and epoch-making war for the liberation of BANGLA DESH.

AIR HEADQUARTERS: The Executive Head at the Air Headquarters is the **Chief of the Air Staff** holding the rank of **Air Chief Marshal**. He is assisted by four Principal Staff Officers heading the four Branches at the Headquarters. The functions of the four branches are:—(1) **VICE CHIEF OF THE AIR STAFF:** He is responsible for plans, programmes, project groups, financial planning, air staff requirements, training, systems evaluation and education. The Directorates under him are : **Assitant Chief of Air Staff (Plans).** (a) Directorate of Training, (b) Directorate of Systems Evaluation, (c) Directorate of Education, (d) Directorate of Plans and Programme, (e) Directorate of Project Groups, (f) Directorate of Air Staff Requirements, (g) Directorate of Financial Planning. (2) **DEPUTY CHIEF OF AIR STAFF;** He is responsible for offensive operations, air defence, transport and maritime operations, intelligence, flight safety, meteorology, signals, air staff inspection, co-ordinations with civil aviation and planning of Joint operations. The Directorates under him are: **Assistant Chief of Air Staff Operations:** (a) Directorate of Intelligence, (b) Directorate of Signal (Air), (c) Directorate of Flight Safety, (d) Directorate of Meteorology, (e) Directorate of Offensive Operation, (f) Directorate of Air Defence, (g) Directorate of Transport and Mechanical Operations, (h) Directorate of Air Staff Inspection, (i) Directorate of Co-ordination (Civil Aviation), (j) Directorate of Joint Operations and (k) Deputy Director of Weapons. (3) **AIR OFFICER INCHARGE ADMINISTRATION:** He is responsible for recruitment, discipline, terms and conditions of service, postings, promotions and welfare, pay, pensions and regulations, medical, accounting, legal matters, works services and organisation. The Directorates under him are : **Assistant Chief of Air Staff (Personnel):** (a) Directorate of Medical Services (Air), (b) Directorate of Accounts, (c) Judge Advocate General (Air), (d) Directorate of Air Force Works, (e) Directorate of Organisation, (f) Directorate of Personnel (Officers), (g) Directorate of Personnel (Airmen), (h) Directorate of Personnel Services and (i) Directorate of Pay, Pensions and Regulations. (4) **AIR OFFICER INCHARGE MAINTENANCE:** He is responsible for Provisioning and maintenance of aircraft and stores, engineering services, M. T., ground electronics, armaments and safety equipment, engineering support, maintenance plans, inspec-

tion and storage of aircraft, and aircraft equipment. The Directorates under him are :—(a) Directorate of Maintenance Plans & Inspections, (b) Assistant Chief of Air Staff (Logistic Management): (1) Directorate of Maintenance, Administration, (2) Directorate of Non-Technical Stores, (3) Directorate of Mechanical Transport, (c) Assistant Chief of Air Staff (Systems) (1) Directorate of Ground Electronics, (2) Directorate of Armament & Safety Equipment, (3) Directorate of Engineering Support, (d) Assistant Chief of Air Staff (Engineering) (1) Directorate of Engineering (A), (2) Directorate of Engineering (B), (3) Directorate of Engineering (C).

COMMANDS : As at present, Indian Air Force is organised into five commands, namely the Western Air Command, the Central Air Command, the Eastern Air Command, the Training Command and the Maintenance Command. The Western, Central and Eastern Commands, have under their control all flying units, namely fighter, bomber, reconnaissance and air transport squadrons and signal units. Within their area and within their jurisdictions the commands are responsible for the defence of India against hostile air attacks and support operations. The Training Command has under its control all training institutions which are responsible for both flying and ground training institutions which are responsible for both flying and the ground training of officers in the Indian Air Force. This Command also controls the training institutions for the training of officers of Ground Duties Branches and all airmen. The Maintenance Command has under its control all the units which are responsible for the repair and/or storage of aircraft, M. T. and signal equipment, armaments, ammunition and explosives. Certain units are controlled directly by Air Headquarters in view of their distinct functions.

OPERATIONAL STRENGTH : (This citation excludes the additions made preparatory to or in the wake of the December '71, war against Pakistan). As at present, Indian Air Force has an operational strength of 625 aircraft organised into forty-five squadrons and is recognised as one of the important Air Forces of the world. It consists of interceptors (supersonic Indian made MIG-21 and Gnats) fighter bombers, Indian designed and manufactured HF-24 Marut, Supersonic SU-7 and Hunters etc.), offensive strike (Canberras) Super-constellations, Indian built HS-748, Caribous, Dakotas and Otter aircraft and MI-4 and Alouette helicopters etc., trainers, (Indian designed and built HJT-16 Kirans, Vampires, Havards and Indian designed and built HT-2). Squadron-wise, the Indian Air Force is organised into; three light bomber squadrons with Canberras B(I); five fighter-bomber squadrons with SU-7s, two fighter-bomber squadrons with HF-24 Marut-1As; six fighter-bomber squadrons with Hunter F-56s, two fighter-bomber squadrons with Mystere IVs, seven interceptor squadrons with MIG-21s, eight interceptor squadrons with Gnats, one reconnaissance squadron with Canberra PR-57s, one maritime rece squadron with L-1049 Super Constellations. Transports include about fifty-five C-47s, sixty C-119s, Twenty IL-14s, thirty AN-12s, twenty-five Otters, twelve HS-748s and fifteen Caribous. Helicopters include about eighty MI-4s, 150 Alouette IIs, ten Bell-47s, and a few MI-8s, about fifty SA-2 SAM complexes. The task of expansion which was undertaken in the wake of Chinese aggression of 1962 and Pakistani aggression in 1964 has been successfully accomplished. The attention has since been on modernisation and rationalisation.

WITH
BEST
COMPLIMENTS
FROM :

RESCON MANUFACTURING COMPANY PRIVATE LIMITED

43/1, KARVE ROAD, POONA 4.

Manufacturers Of :

'RMC' ELECTRONIC COMPONENTS

SOLE SELLING AGENTS

CHAVANNES & CO. PRIVATE LTD.

MERCANTILE CHAMBERS GRAHAM ROAD,
BALLARD ESTATE, BOMBAY 1.

Phone : 264231-33

Grams : "INDOFRANCO"

*With our Warmest
Greetings to
All Officers and Men of
Our Gallant Armed Forces*

SUNCO ENTERPRISES

473, S. V. ROAD, MARWARI SECTION BUILDING,
BOMBAY 4.

Cable: SANKULAW

Phone: 383485
532926

Stockists : Ramon Demon Gears
Specialists : Tata, Leyland, Fiat and Ambassador Spares

TRAINING FACILITIES : A great landmark in the field of training has been achieved with the inauguration of the first phase of the composite Air Force Academy near Hyderabad. When the final phase of this Academy is completed, it will train pilots, navigators, ground duty officers (non-technical Branches) Air Signallers, Air Observations Post Pilots and pilots and navigators of the Fleet Air Arm of the Navy. The Academy will also train pilots and navigators from friendly foreign countries. As at present, pilot trainees go to Elementary Flying School for the initial training. For their intermediate training, they go to the Air Force Academy. After this stage, their paths diverge. Those selected to be fighter pilots go to the Fighter Training Wing, while the transport pilots undergo their training at the Transport Training Wing. Ground duty (non-technical) officers are trained at Air Force College. Technical Officers are trained at Air Force Technical College. Airmen, depending upon their trades, are trained at Nos. 1, 2, 3, 4, 5 and 6 Ground Training Schools. In order to improve the all-round efficiency of the Air Force, it has been the practice with the Government to undertake studies by specially appointed teams. Latest management techniques and system analysis to suit the specialised needs of the Air Force are prescribed and enforced. Latest developments in the concepts and techniques of air warfare, particularly in relation to short and long term threats faced by the country, are constantly evaluated and appropriate improvement measures taken.

FOR YOUR REQUIREMENTS OF :

AIR SAMPLERS,
AIR SAMPLING PAPERS,
RESPIRATOR FILTERS
FILTER HOLDERS, FILTER BAGS, FILTER FABRICS

ALSO : ROTAMETERS Glass Tube, Plastic Body
MANOMETERS U-Tube Double, Column
Well Type Inclined Tube etc.

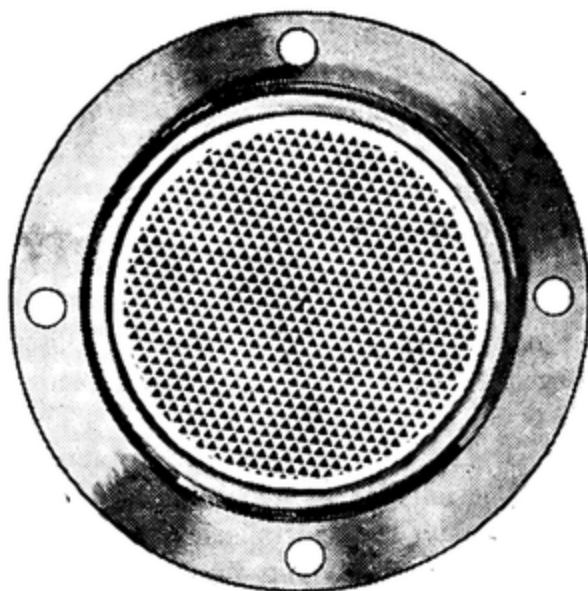
PITOT TUBE ORIFICE METERS
CLEAN AIR CABINETS (LAMINAR FLOW HOODS)

CONTACT :

Filfab (India) Corporation

73-C VEER NARIMAN ROAD, OPP. CHURCHGATE
STN., BOMBAY-20.

Phone : 291612



CAREX

REFLEX REFLECTORS ARE LIFE SAVERS

CAREX REFLECTORS ARE APPROVED BY:—

- Chief Inspector of Vehicles, Ministry of Defence,
Ahmednagar,
- Director of Transport, Govt. of Maharashtra,
Bombay.
- Director of Transport, Govt. of Gujrat, Ahmedabad,
- Chief Signal & Telecommunication Engineer,
Western Railway, Bombay.

MANUFACTURERS :

UPPER INDIA TRADING CO. PVT. LTD.

424, Lamington Road, Opera House,
BOMBAY-4. Phone : 353575 • 375330

BRANCHES: DELHI • MADRAS • NEW DELHI

DEPARTMENTS OF DEFENCE PRODUCTION AND DEFENCE SUPPLIES

AS at present, the Ministry of Defence in the Government of India charts, controls, guides and conducts all defence production through the Department of Defence Production and the Department of Defence Supplies. The Minister of Defence in this field of activity is assisted by the Minister of Defence Production. As at present, the offices attached to the Department of Defence Production are the Directorate General of Ordnance Factories, Research and Development Organisation, Directorate General of Inspection, Directorate of Planning and Co-ordination, Directorate of Technical Development Production (Air) and Accelerated Freeze Dried Factory. In addition, there are eight Defence Production Undertakings in the Public Sector. There are also undertakings in the private sector committed to Defence Production. In the words of the Authority, 'From bolt action rifles, guns and ammunition of old vintage, to the production of the most modern frigates, equipped with missiles and helicopter, supersonic air-craft armed with air to air missiles; radar controlled anti-aircraft guns and the Vijayanta tank, fitted with infra-red equipment, is the fascinating story of the defence production. During the last twenty-five years, the country has achieved a large measure of self-sufficiency in the production of weapons and equipment. The country is completely self-sufficient in small arms including semi-automatic rifles, light artillery, a wide variety of ammunition, chemicals, parachutes, textiles, vehicles and general stores.'

DIRECTORATE GENERAL OF ORDNANCE FACTORIES : At the dawn of independence, there were only seventeen ordnance factories. They were conceived as subsidiaries of the Royal Ordnance Factories. They had very limited capacity and were mostly manufacturing general stores items and a few old vintage arms. After the dawn of independence, thirteen new factories have been set. Ten of these have come up after 1962, in a bid to achieve self-sufficiency in the defence sector.

As on December 31, 1971, there were twenty-eight ordnance factories, some of which ranked among the oldest public sector enterprises in the country. They were under the overall control of Ordnance Production Board, which was constituted in May 1971 and which consisted of the Secretary, Department of Defence Production, (Chairman) Secretary, Department of Defence Supplies, Financial Adviser, Defence Services, Additional Secretary, Director General of Ordnance Factories, Department of Economic Affairs, Master General of the Ordnance (Army), Chief of Logistics (Navy) and Air Officer, Maintenance (Air Force), Director General, Supplies and Disposals, Director General Technical Development, Joint Secretary (Factories), Department of Defence Production, Member Secretary. They were engaged in the production of weapons, ammunition, vehicles, instruments, chemicals, clothing and other defence equipment. There were two more factories, the Heavy Vehicles Factory at Avadi and the Accelerated Freeze Dried Meat Factory at Tundla, which were under the direct supervision of the Ministry. The progress made in all these factories could be judged from the fact that, the value of production had risen from Rs. 40 crores in 1961-62 to well over Rs. 130 crores in 1971-72. The value of issue for arms and ammunition and clothing and general stores 90.09 crores in 1967-68

FOR PERFECT PACKAGING INSIST ON

"PAGODA"

Corrugated Paper and Boards.

Manufacturers :

SWASTIK PAPER INDUSTRIES

Factory : Sewri Cross Road,
Bombay-15.

Telephones : 445714
441723

Sales Depot : 1st Parsiwada Lane,
Opp. Girgaum P.O.,
Bombay-4.

Telephones : 354369
358518

Telegram : PAPERHINDI

With Best Compliments from

EMMES METALS PRIVATE LIMITED

Manufacturers of :

- * **NON-FERROUS ALLOYS, CASTINGS & FLUXES**
- * **CHEMICAL PLANT EQUIPMENTS**
- * **ANTICORROSION LINING**

We are ready to serve the nation better with our unique offer based on **Imported Raw Material Cost Basis**, to **Actual users**, provided, the Government helps us.

We believe this will hold the price line and curb inflammatory tendencies in the Industry. It will enable small entrepreneurs to participate meaningfully in the National Goal of **"Garibi Hatao"** by their fair business practices.

Registered Office & Works

147, Govt. Industrial Estate, Kandivli (West), Bombay-67.

Phones : 693368 (3 Lines) 695894, 693029.

to Rs. 138.43 crores in 1971-72. Reporting at the end of December 1971, the Ministry of Defence stated that, the Ordnance Factories met the entire requirements of the Army in respect of the Infantry weapons, like 7.62 mm self-loading rifles, 7.62 mm light machine guns, the 9 mm carbine, anti-tank rifle grenades, 81 mm mortars, 57 mm and 106 mm RCL guns, which had replaced the weapons used by the Army units a few years ago. For the artillery regiments, the Factories had established the production of 120 mm mortars and for the Mountain Regiments 75/24 Pack How Gun, which was designed and developed by the Defence Research and Development Organisation. The Factories were well set to meet the entire requirements within the next two years. The Air Defence Regiments had been progressively equipped with a modern anti-tank gun, for use against low flying aircraft, along with the sophisticated radars manufactured by Bharat Electronics Ltd. All types of ammunition required for all these weapons was being manufactured by the Ordnance Factories. The factories were also producing a wide range of ammunition items for the Navy and bombs, ammunition and rockets for the Air Force.

Among the new projects, undertaken, the more important was the Indian Field Gun, designed and developed by a development team specially constituted for the purpose. The Government had already sanctioned this project and the bulk production of the guns was slated to commence within the next few years. The other new projects, which had also received the sanction of the Government, were; (a) 9 mm pistol for the Defence Services, (b) .32" pistol for civil use, (c) Medium Machine Guns for infantry and tanks, (d) Setting up of a special steel plant at Kanpur to provide various categories of special steels of high specification required by the ordnance factories, (e) A new propellant factory with latest process of manufacture of the propellents and (f) Setting up of Techno-Economic Committee to assess the total requirements of optical glass. The report of this Committee had already been received. The proposals to augment the production of optical glass were under active consideration, and (g) A number of steps were initiated to modernise the factories, particularly High Explosive Factory, Kirkee.

The Heavy Vehicles Factory, Avadi, which rolled out the first Vijayanta tank in 1965, had been making steady progress, building up its production from year to year. This factory, a modern integrated unit, was producing under one roof, all the major assemblies like engines, gear boxes and suspensions for the armoured fighting vehicles. Besides, Vijayanta tank, the factory had gone into the production of Armoured Recovery Vehicles, designed and developed with indigenous know how and talent. Army had requirements of light armoured vehicles, including Armoured Personnel Carrier and Armoured Recovery Reconnaissance Vehicles. The R & D authorities had completed the design and development of an indigenous Armoured Personnel Carrier and the prototype was expected to go for trials shortly. Similarly, manufacture of a self-propelled gun was under production. The Vehicle Factory at Jabalpur, with all modern facilities had gone into production of all 4 x 4 vehicles required by the Army, namely the Shaktiman trucks, the Nissan 1 tonne trucks and the Jongsas. The Ordnance Cable Factory at Chandigarh continued to make steady progress and met the increasing requirements of the Army for field cables. Various types of P & T cables had also been developed and negotiations were being conducted with the concerned Departments for obtaining orders.

Whatever Shape Your Problem Takes.....

.....ask **JINDALS**

.....for **SOLUTION**

JINDAL ALUMINIUM PVT. LTD.,

Manufacturers of :

HIGH QUALITY ALUMINIUM EXTRUSIONS.



Regd. & Sales Office :

1/6B, Asaf Ali Road,
New Delhi-1.

Works :

10th Mile, Tumkur Road,
Bangalore-22.

SALTER

WEIGHING MACHINES

TRADE—PEDESTAL—BALANCE

- 10 KG. x 50 g (divisions)
- 20 KG. x 100 g (divisions)
- 50 KG. x 200 g (divisions)

STAMPED BY WEIGHTS AND MEASURES AUTHORITY



Distributors For Western Ind

PHONE

2 6 3 0 9 8

M. FRAMROZE & COMPANY

Taj Building, 210, Dr. D. N. Road, BOMBAY-1.

During the Fourteen-Day War against Pakistan, the Ordnance Factories did their level best to meet the immediate war requirements to the fullest extent by stepping up their production even beyond the rated capacity. During the period of emergency, the production of semi-automatic rifle increased by 46%, LMGs by over 50% and Carbines by over 80%. Infantry ammunition registered an equally impressive record of production. Production of artillery weapons was kept up in the face of many difficulties while that of artillery ammunition rose by 20%. The Ordnance factories also effected innovations and met the demands of the Services for unconventional items. The Ammunition Factory at Kirkee turned out for the Navy, an underwater charge, which kept the enemy frogmen and midget submarines away from our fleet harbours. The High Explosive Factory, Kirkee, produced a special kind of aviation fuel, with very stringent specifications required for the Air Force. The Ordnance Factory, Muradnagar, redesigned and adapted to meet the heavy operational requirements of the Air Force.

RESEARCH AND DEVELOPMENT ORGANISATION : As a supporting organisation for the Defence Services, the Defence Research and Development organisation broadly aims at designing and developing new and sophisticated equipment based on the operational requirements and to help in their indigenous production. It also provides scientific support to the Services in solving the physiological, food and other problems of the Jawans. The organisation has on its rolls, nearly 2000 scientists/engineers, besides other cadres of scientific assistants engaged in as many as 1100 different research and development projects/studies. Following were the main activities of the organisation during the year 1971.

(a) A separate Aeronautics Research and Development Board of Scientists and experts from industry was formed under the Chairmanship of the Scientific Adviser. The Board was vested with financial powers in the formulation and assigning of research and development programmes in the areas of missiles and aeronautics to other institutions. Similarly, for the co-ordination of the effort with other institutions in the country in the field of electronics, a separate Planning Unit for research and training in radar and communications was formed. In addition, an Electronic Data Processing Cell was formed to co-ordinate and progress the requirements of the Defence Services and other Inter-Service Organisations under the Ministry, (b) In order to effectively deploy the research and development potential to maximum advantage, a decision was taken to set up Research and Development Cells in the Ordnance Factories and in other Defence Public Sector Undertakings. They were to handle the tasks relating to indigenisation and improvements in equipment, (c) In order to utilise the research potential available within the country, and to create a broader base for defence oriented research seventy defence research projects were farmed out to the Laboratories under Council of Scientific and Industrial Re-search and establishments of Atomic Energy Commission. Sixty-four schemes and projects were farmed out to universities and other institutions in the country under grant-in-aid scheme, (d) Of the different research and development projects/studies during the year, one hundred eighteen projects were completed. In addition, pilot plant production of some of the items developed was undertaken to meet the urgent requirements of the Services, (e) A major achievement during the year was the development of variable time fuses by collaboration of two of the Defence Research and Development Laboratories and Bhaba Atomic Research Centre.

- ON GOVERNMENT LIST OF APPROVED CONTRACTORS AND SUPPLIERS
- WITH A RECORD OF PERFORMANCE THAT WILL FILL ANY COMMERCIAL UNDERTAKING WITH UNBOUNDED PATRIOTIC PRIDE.

● Bearingage Corporation

216, KALBADEVI ROAD, BOMBAY-2. BR.

Phone :— 310350 — 319272.

Gram : "FORWARD"

MEMBERS OF :

- THE ALL INDIA BALL BEARING MERCHANTS ASSOCIATION
- THE MILL GIN STORES MERCHANTS ASSOCIATION, BOMBAY

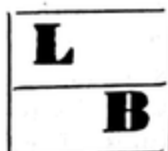
WE ARE SPECIALISTS IN BEARINGS

WITH

**WARMEST GREETINGS TO ALL OFFICERS AND
MEN OF OUR GALLANT ARMED FORCES**

FROM :

**LUNA
BEARINGS**



137, ABDUL REHMAN STREET, BOMAY-3. BR.

Phone : Office : 329995 — Res. : 370415

Grams :— ATOZ "ROLLER", BOMBAY (MANDVI)

Importers, Dealers and Suppliers in :

**BALL ROLLER & THRUST BEARINGS FOR
INDUSTRIAL AND AUTOMOBILE PURPOSES**

SKF, FAC, RM. RIV., USSR, FLT, INS.

This type of fuse was extensively used by the three Services with ammunition/bombs to cause their detonation in close proximity of the targets, (f) Development work on a new field gun, with greater range to the existing 25 pounder gun in collaboration with Director General of Ordnance Factories was completed and quantity orders were placed after acceptance of the equipment by the users, (g) Other items developed and awaiting production were star shell and armour piercing shot for the mountain gun, drivers' infra-red binoculars for Vijayanta, muzzle bore sights for artillery and Tank Guns and an improved tear gas grenade and triple chaser for the Police Forces, (h) The items in advanced stages of development were, the percussion fuzes for the field and mountain guns, indigenous propellents for a variety of artillery and tank ammunition, night aiming devices for Ichapore rifle and the machine guns (i) Some of the seat ejection and canopy jettisoning cartridgeges, developed for service aircraft, were produced on pilot plant scale at one of the Establishments and development of a few other types were in progress, (j) Research and development effort in the missile field was considerably strengthened by building up a range and propellant test activities and by some augmentation of manpower, (k) Some effort was also devoted towards development of strategic materials, particularly metal and alloys required for aircraft, electronics and missiles, (l) Research on various applications of powder metallurgy for defence applications were undertaken at the Powder Metallurgical Plant, which had also simultaneously been supplying tungsten carbide, armour piercing shots and nose cones required for the production of armour piercing ammunition. Some of the other items already developed under pilot plant production were the shatter alloy castings and permanent magnets of various types. (m) In the field of radar and electronics, some of the important items developed, and brought on to production, were the battle field surveillance radar for infantry radio frequency interference kit for Vijayanta, nickle cadmium battery for field communication set, functional tester for one of the wireless sets, electronic Fuller-phone, besides some of the electronic secrecy equipment and charging and generating set for special applications, (n) In the field of Engineering and Vehicles, some of the important projects, which were completed, were the assault trackway heavy, the mechanical minelayer, bridge erection boat, support kit overhead protection, light metal framework, besides a variety of pre-fabricated shelters for use in the plains and at high altitudes.

The important projects in the advanced stages of development included the radio controlled target boat, boat assault universal, aerial cable way battalion and class 50 tank approach. The important equipments developed by the Vechiles Division included the armoured scout car, light machine gun mounts for jeeps, fitment of infra-red equipment on Vijayanta and fitment of Communication equipment for tactical role on 3 ton and 1 ton vehicles, besides 10/20 ton low bed trailers and some other specialist vehicles. A transistorised gear box controller for Vijayanta had also been developed at one of the Establishments. In the field of aeronautics, a phased programme of the expansion of facilities, expertise and induction of additional manpower was undertaken in the two Aeronautical Establishments. As on December 31, 1971, the Orpheus 703 engine with the re-heat system had completed 150 hours type approval test. Two engines of this standard had been delivered to HAL for further flight trials. A number of competence build-up projects were undertaken for gas turbine component research aimed at future indigenous development of aero engines and applied aerodynamics

and structures. Development of aluminium 5% magnesium alloy for aircraft and valves for high pressure compressed gas cylinders and a gear box controller for Vijayanta had also been completed. In the field of naval equipment, the important items on which development work was completed in the Naval Group included the passive listening and harbour sonars used for detecting torpedos and submarines, indigenously developed transducer for the sonar system, a miss-distance indicator for TV fuzes and echo injector for training of sonar operators, an impressed current cathodic system for ship hulls. In addition, soluble plugs for the limpet mines were also developed. In the field of textiles, clothing and general Stores and materials, some of the important items developed included boots paratroopers, helmet protective light weight and crash helmet for despatch riders, carrying equipment for mortars, machine guns, recoilless guns and ammunition and parachute cargo. Other items in advanced stages of development included, clothing and footwear for submarine crews, fireproof overalls for tank crews, equipment camouflage for artillery guns, and various types of parachutes. Among the important items developed in the field of materials included Minographic recording fluid, 'polyshine', for perspex and similar materials, anti-misting composition for wind shield glasses, high temperature resistant sealant for flange and other joints in tanks, indigenous adhesive for bonding rubber to mild steel to facilitate manufacture of ammunition, dual type cement for repair of aircraft, fuel tanks and a large variety of aircraft seals. In the field of behavioural, food and medical sciences, studies and investigations were undertaken into physiological and psychological problems of Jawans connected with the environment generated by the operational conditions. Special problems in the field of food and nutrition and development of accelerated freeze dried food and pack rations to meet the various operational requirements were also tackled. Research was also carried out on the development of radio-isotopic techniques in medical research, diagnosis and therapy for the development of radiation hygiene and health protection measures.

DIRECTORATE GENERAL OF INSPECTION : It is responsible for inspection and quality control of all warlike and non-warlike stores used by the Army. (*i.e.* Armaments, Electronics, excludes General stores, Engineering stores etc.) Marine stores and common warlike stores required by the Navy and the Air Force. It is also responsible for indigenous development of machinery, equipment and all other types of stores required for the Frigate Programme. It has seventy major establishments, besides a number of their wings and detachments, located alongside ordnance factories, public sector undertakings, and in important industrial centres to facilitate quick and efficient testing and inspection. It also renders technical advice and assistance in the establishment of production of new items in ordnance factories. It provides full technical advice and assistance in the establishment of production of new items in ordnance factories. It provides full technical support to the Department of Defence Supplies, which is responsible for establishing indigenous production of Defence Stores whose manufacture is not already established in the country. The D.G.I. functions as Technical Adviser to the Service Chiefs on stores and equipment. He investigates accidents, defects and failures reported to him by the Service Units and suggests remedial measures. His assistance has also been extended to non-defence work on nominal payments by the undertakings concerned.

During the year 1971, the total cost of stores inspected by the DGI stood at Rs. 488.63 crores. The value of the 6357 items cleared by the Technical Committee under the DGI for placement of orders on indigenous suppliers stood at Rs. 4873.47 lakhs. During the same period, the main development activities, included the production development of nine hundred Defence Stores and successful establishment of five hundred and nine items. Some of the important items were; (a) **Armaments**:—Bands for tank ammunition, polythene containers for ammunition; water proofing of platforms for A/A gun, parabolic reflector used on searchlight (b) **Vehicles**:—Development of hydraulic motor for Vijayanta cooling driving system; air cleaner testing rig, testing rings for switches and brake hose, retreading system, air cleaner testing, rig, testing ring for switches and brake base, retreading of tyres for Maz tractor, (c) **General Stores**:—Dying of shirting angola drab with indigenous dyes; fast dyeing with relatively cheap dyestuffs and new shades of Naval uniform (d) **Electronics and Electricals**:—Charging set 500W 5.5KW Mk.II, switch board field 50 lines, repeater field telephones, 5 vital electronic/electrical sub-assemblies of an anti-aircraft gun, gear box controller a vital sub-assembly of Vijayanta tank and metallic mine detector. (e) **Warships**: Main turbines and main gear boxes. (f) **Marine Stores**:—Steel Wire rope for arresting gear, annular floats for magnetic mines sweeping crane, envoy electronics devices, 20 men inflatable life rafts. (g) **Assistance to Civil Sector**:—The DGI rendered the following assistance to the civil sector (i) Expert advice to police and civil authorities in 31 cases. (ii) 88, 418 shot guns (Proved) for the civil industry. (c) Trained seven police officers in Forensic Ballistics at Kirkee Laboratory, (iii) Tested samples for several Central and State Government Departments and private firms where adequate testing facilities were not available. This included assistance to Textile Commissioner in testing of samples at Bombay Laboratory to exercise control on the quality of textile materials (h) **Training Courses**:—The Directorate conducted two courses on Management and Workstudy Appreciation at the Defence Institute Work of Study.

DIRECTORATE OF STANDARDISATION: The main task of the Director is to provide administrative support to the Standardisation Committee consisting of senior representatives of the Armed Forces and the Ministry. As on December 31, 1971, there were seven sub-committees and 45 specialist technical panels under the Standardisation Committee. During the year 1971-72, the Committee examined 21,000 items, of which about 10,000 were standardised. An overall reduction in variety by four per cent, over the previous year was achieved. Another important aspect entrusted to the Directorate is the metrication of defence stores. During the year 1971-72, the Directorate compiled a document on International System of Units, which received wide acclaim. The Directorate, also co-ordinates and regulates, the co-operation of the Services with the Indian Standard Institution in formulating National Standards. Another important task of this Directorate is the control on cataloguing of items on a Joint Service basis. By the end of December, 1971, the Directorate had standardised and catalogued 50,689 items, of which 14,442 were newly introduced and catalogued.

DIRECTORATE OF TECHNICAL DEVELOPMENT AND PRODUCTION (AIR): This Directorate is responsible for the inspection of aeronautical equipment and stores required by the Defence Services, as well as for the development of indigenous sources of certain types of aeronautical stores. The Directorate is

**DEFENCE PRODUCTION
IS CERTAINLY THE BUSINESS
OF THE GOVERNMENT**

**HOWEVER, PRIVATE INDUSTRY
HAS ALSO ITS OWN ROLE TO PLAY**

ALDOWIET

ENGINEERING COMPANY

MINERVA MOVITONE COMPOUND
BUNDER ROAD, SEWREE,
BOMBAY - 15.

PHONE : 441906 - 472057

MANUFACTURERS OF

- **SILDEX ALUMINIUM**
- SLIDING WINDOWS**
- **ENTRANCE DOORS**
- **PARTITIONS**
- **SHOP FRONTS**
- **LOUVERS**
- **NORTH LIGHT, GLAZINGS ETC.**

**ARMED FORCES GUARD OUR FRONTIERS...WE SERVE AND
STRENGTHEN THEM BY INDUSTRIAL DEVELOPMENT**

also entrusted with the task of screening indents for import of aeronautical stores to ensure that no item is imported for which indigenous sources have been established in the country. In 1971-72, the Directorate inspected aeronautical and allied stores worth Rs. 68.75 crores. During the same period, the Directorate also successfully developed and brought into production, as a part of substitution activity 165 types of aeronautical and allied stores which included avionics, items in the field of armaments and ancillaries. The Directorate also established indigenous sources of supply for about 1,200 items of equipment required for setting up certain repair facilities in the Indian Air Force. The Directorate also undertook the fabrication of various types of proof equipment required for testing armament stores during production and while in storage in the Air Force. These items were earlier imported. As a result of the activities of the Directorate, a foreign exchange expenditure of about Rs. 241 lakhs was avoided.

PUBLIC SECTOR

DEFENCE PRODUCTION-UNDERTAKING

AS on December, 31, 1971, there were eight undertakings in the Public Sector committed to Defence Production under the overall control and direction of the Department of Defence Production in the Ministry of Defence. They constituted an important base for the manufacture of equipment required for the Defence Services. The undertakings were Hindustan Aeronautics Limited, Bharat Electronics Limited, Mazagon Dock Limited, Garden Reach Workshops Limited, Praga Tools Limited, Bharat Earth Movers Limited, Goa Shipyard Limited and Bharat Dynamics Limited. Excepting Praga Tools Limited and Goa Shipyard, all other undertakings were wholly government owned. In Praga Tools Limited, the Government of India held nearly 77.6% of the shares, the Government of Andhra Pradesh 16% and the general public the remaining 6.4%. In Goa Shipyard Limited, 52% by the Government of India and the balance by the General public and private institutions. The total paid up capital of all these undertakings, as on 31st. March, stood at Rs. 78.17 crores and it was expected to increase to Rs. 79.92 crores by March 31, 1972. The total Government of India loans as on March 31, 1971 amounted to Rs. 76.10 crores and these were expected to increase to 82.01 crores by March 31, 1972. Throughout the year 1971, all these undertakings maintained an upward trend in production. The total value of production in these undertakings during the year 1971-72 was expected to be of the order of Rs. 172.60 crores as against Rs. 161.00 crores in 1970-71. The working results of the undertakings continued to show improvement except for Praga Tools, which had been incurring losses due to the recession in the machine tools market. On the basis of its working in 1970-71, Hindustan Aeronautics Ltd. for the first time declared a dividend along with Bharat Electronics Ltd. Mazagon Dock Ltd., Garden Reach Workshop Ltd., Bharat Earth Movers Ltd. and Goa Shipyard Ltd. In order to achieve maximum possible self-sufficiency and to replace dependence on imports, utmost efforts continued to be made to manufacture indigenously, items which were earlier imported for production needs. The efforts yielded promising results.

WITH

OUR WARMEST GREETINGS

TO

OUR GALLANT ARMED FORCES

Modern Battery & Auto Corporation

NENE BUILDING, OPP. ALBLESS BAUG,
301, CHARNI ROAD, BOMBAY 4.

PHONE: 382047

RESI.: 476691

WITH OUR WARMEST GREETINGS TO

**ALL OFFICERS AND MEN OF OUR
GALLANT ARMED FORCES**

Guardians of our National Freedom,
Safety, Honour, Self respect and Prestige.

B. P. Steel Industries Pvt. Ltd.

Mysore Chemical Compound,
39-44 Sion East, Bombay 22,

Manufacturers and Fabricators

Phone : 473423

Grams : "BIPISTEEL"

HINDUSTAN AERONAUTICS LIMITED

THE Undertaking originally known as Hindustan Aircraft Limited was born at the hands of Seth Hirachand Walchand. However, it was later taken over by the Government and redesignated as Hindustan Aeronautics Limited. The measure was designed to secure better co-ordination in policy, expansion and production of aircraft in India. As on December 31, 1971, the HAL stood out as one of the largest industrial complexes in the country with a paid up capital of Rs. 50 crores and a labour force of over 36,000. Committed to the manufacture of several types of aircraft and aeronautical equipment, the company had six divisions, i.e. the Bangalore Division, the Nasik Division, the Koraput Division, the Kanpur Division and the Lucknow Division. While the Indian Air Force was the major customer, the Company was also supplying HS-748 transport aircraft to the Indian Airlines.

As on December 31, 1971, the HAL was manufacturing HF-24 (Marut) a supersonic fighter and HJT-16 (Kiran) a basic jet trainer. Both the aircraft type had been designed and developed indigenously. In addition, the Company was producing Alluette (7 seater) helicopter, MIG-21, supersonic jet interceptor aircraft and HS-748, twin engined transport aircraft. These aircraft types were being manufactured under licence from original manufacturers in other countries. The Bangalore Division was also manufacturing Orpheus 701 engine for the Gnat, Orpheus 703 engine for HF-24, Artoste III-B engine for Alouette helicopter and Dart Engine of HS-748. Besides the manufacturing activities, the Bangalore Division was also undertaking the overhaul of several types of aircraft and engines, principally for the Indian Air Force, both at Bangalore and at outstations. Facilities for the overhaul of MiG aircraft were also being developed progressively. The company had also concluded agreements to produce under licence Airfield Surveillance Radar and equipment and precision Approach Radar equipment for the Air Force.

Throughout the period, the Company continued its efforts in the directions of indigenisation of aircraft materials and stores and achieved very significant successes. As a result of these efforts, the indigenous contents of HF-24 had reached 70%. Production of various aircraft accessories at the new Accessories Division was expected to help further reduction in dependence on imports and increase in the indigenous contents. In order to give still further impetus to indigenisation and import substitution, the indigenisation cells in the Company were being further strengthened with the assistance of the Department of Defence Supplies in the Ministry of Defence. In the field of fresh design and development, the second prototype of the Trainer version of HF-24, designed and developed at the Factory, was successfully flight tested in March, 1971. The proposal regarding an improved version of HF-24 was under consideration and work on the prototype of a modified design of agricultural aircraft was in an advanced stage and the prototype was expected to fly in 1972. The design cell at Hyderabad had taken up the development of several items of electronic equipment.

BHARAT ELECTRONICS LIMITED

SET up in 1954, the Company, was initially planned for an annual production of about Rs. 4.25 crores. At the commencement of the emergency in 1962, there was a serious shortage of signal equipment. The Company, therefore, rapidly stepped up and diversified its products. The production curve continued to rise and it touched the order of 29.40 crores in 1971. It was expected to rise to the order of Rs. 32 crores in 1971-72. To meet the still growing requirements of the Defence Services, Civil Departments and electronics industry, the Factory was planning to further expand its production and achieve the production target of Rs. 50 crores per annum by 1974-75.

As on December 31, 1971, the Factory was manufacturing high grade professional electronics equipment such as transmitters, receivers, trans-receivers and radars for All India Radio, Police Force, Communications and Railways and Meteorological Departments. In the Components Division, the Factory was producing several types of specialised components such as receiving valves, Germanium and Crystals, Transmitting Tubes and Cathode Ray Tubes. In the field of Research and Development, the Factory continued its vigorous efforts towards designing and developing new equipment and components incorporating advanced techniques, modifications and improvements in equipment already under production in order to meet the specific requirements of the users and to help increase the indigenisation. During the year 1970-71 the Division was able to complete the development of 32 equipments. During the year 1971-72, it completed the development for another twenty-one equipments. These items included Cyclone Warning Radar and Wind Finding Radar for the Meteorological Departments and a midget business computer for small business houses. As against the production of the value of Rs. 1.3 crores in respect of indigenously developed items of equipment accessories and spaces during 1968-69, the value of production of such items was expected to be of the value of Rs. 6.9 crores in 1971-72. On the Components side, continued effort on research and development enabled the Factory to develop a number of new types of receiving valves, Silicon Semi Conductor devices, Mica Capacitors, Cathode-Ray tubes, X-Ray and Transmitting Tubes. The factory also started production of two types of Germanium medium power transistors, a general purpose switching diode and a photo-transistor. The future development programme of the Factory aimed at the indigenous development of a complete range of HF, VHF and UHF communications equipment using modern techniques. Other areas of future development activities included a microminiaturised X-Band Radar, which was to be the heart of many radar systems in the future, and a range of desk calculators. While continuing the effort at the parent factory, a second factory was being set up at Gaziabad for the manufacture of micro wave and radar equipments. The land for this factory had been taken over from the Government of Uttar Pradesh and action was in hand to start the construction of essential factory buildings to enable the production to commence from about the middle of 1973-74.

Throughout the period, the Factory continued its efforts at increasing indigenisation of equipments. However, the efforts remained limited by the current state of development of infrastructure for the electronic industry and also by the specific requirements of uses which sometimes compelled the Factory to undertake licenced

manufacture of new items. During the year 1970-71, the antenna drive mechanism which as a major component of radars was organised and taken up for production. In addition, indigenous sources were also located for telephone pockets, relays, rotary switches, import substitution efforts for a number of components, such as precision gang condensers, connectors, hermetically sealed relays and ferrite pot cores were in progress. The overall indigenous content for the year 1972-73 was expected to reach about 75% and this was further expected to improve to about 82% in 1973-74. A feature, gratifying indeed, was that the price of the electronic equipment produced at the Factory compared favourably with the FOB prices of similar imported equipments. In the case of components, the prices were somewhat higher. This was, however due to the volume of reduction of these items being very much less than the production of electronic factory abroad. As on December 31, 1971, the Factory was preparing to undertake several new projects. These included the manufacture of sophisticated micro-wave and radar equipment for the requirement of air defence, integrated circuits, television studio and transmitting equipment and micro-computers and desk calculators. A proposal for the manufacture of Glass Shell for TV pictures Tubes was also under consideration.

MAZAGON DOCK LIMITED

THE Company was acquired by the Government in the Ministry of Defence on 19th. April, 1960. Its main activity remained limited to ship-repairs for about four years even after the takeover. It was only in 1964-65 that the first expansion and modernisation scheme involving capital cost of nearly 3.32 crores was launched. Under this expansion scheme, which has since been completed, two new ship-building berths, with necessary crange facilities, and other essential services, were provided. This was in addition to modern production and assembly shops, with a large number of cranes and latest type of machinery, new stores and other connected buildings, and an impounded web dock with the capability of accommodating four medium size ships at a time. New electrical/electronic shops and fitting out shops were also built alongside the impounded Kasara basin and modern machinery and equipment was installed in these shops. With the addition of these modern shops, shipbuilding berths, machinery and equipment and associated facilities, the Dock had become capable of building ships upto 145 metres in length, 25 metres in breadth and approximately of 15,000 tons DWT.

Reporting on the results of the above said and subsequent development schemes launched, the Ministry of Defence, have proudly claimed that, as on December 31, 1971, the Yard was in a position to build sophisticated warships, passenger-cum-cargo ships, dredgers, tugs, trawlers, barges, launches, assault boats, floating docks and floating cranes etc. The Dock had also built up capacity for undertaking ship repair work and general engineering work, such as repairs to machinery and equipment, precision machining, radio graph and quality welding, overhauling of steam, diesel and petrol engines, castings and manufacturing of high pressure vessels. Over the years, the Dock have earned a name for quality and workmanship competitiveness in prices and timely deliveries. The greatest achievement of the Dock had been in the field of warship building.

WITH OUR
BEST WISHES AND
WARMEST GREETINGS TO

ALL OFFICERS AND
MEN OF OUR GALLANT
ARMED FORCES AND
AUXILIARY ARMS

P. FIDAHUSEIN & CO.

54, SAMUEL STREET, BOMBAY-9

Dealers in and Suppliers of

GLASSWARE, CROCKERY, CUTLERY,
KITCHENWARE, DOMESTIC HARDWARE,
VACUUM FLASKS, PLASTIC AND
THERMOCOLE PRODUCTS, ETC.

WITH OUR WARMEST
GREETINGS TO

ALL OFFICERS AND MEN OF OUR
GALLANT ARMED FORCES

CHINUBHAI KALIDASS & BROS.

Room No. 3, 2nd Floor, Union Co-op. Ins. Building,
23, Sir P. M. Road, Bombay-1.

CLEARING, FORWARDING, SHIPPING AND TRANSPORT AGENTS

MACHINERY, BAG, CARGO & CHEMICAL CLEARANCE A SPECIALITY

During 1971, the foremost activity of the Dock concerned the construction of **Leander Class Frigates** which incorporated the latest features of naval architecture, marine, mechanical and electronic engineering and naval armament. During the year 1971-72, apart and aside of INS, NILGRIS, the first Leander class frigate, which incorporated the latest features of naval architecture, marine mechanical and electronic engineering and naval armament the Dock delivered to users one self-propelled Cutter Suction Dredger to the Government of Maharashtra. The other vessels under construction during the same period included one passenger cargo vessel 'State of Bombay' for Shipping Corporation of India and four 500 ton self-propelled iron-ore barges. The Dock had also received orders from the Shipping Corporation of India for the construction of one more passenger-cum-cargo ship as replacement vessel of the 'State of Madras.' Orders had also been received for dredgers from the Marmagao Port Trust and Kerala Government in the face of competition from other Yards. The Ship repair turnover touched an all time high record of Rs. 452.88 lakhs during the year 1970-71. The foreign exchange earnings during the same period from ship repair work amounted to Rs. 121 lakhs. It was expected to increase still further during the year 1971-72.

GARDEN REACH WORKSHOPS LIMITED

THE Company was acquired by the Government of India in the Ministry of Defence in 1960. At the time of acquisition, the Company was engaged in ship building and ship repairs in a minor way. After the take over, the Company has grown into medium size industrial unit engaged in the construction of large capacity dredgers and other floating crafts, fabrication of sophisticated technological equipment for steel plants and manufacture of other engineering items like road rollers, air compressors and turbine pumps. In addition, it has established a plant for the manufacture of marine diesel engines at Ranchi. With a view to progressively increase the indigenous contents of dredgers and ships to be built in the Indian Yards, the Workshops have established the manufacture of deck machinery items, such as cargo winches, windlasses and capstans. The Company also proposes to manufacture hydrolock steering gear.

**A
T
L
A
S**

ATLAS

QUALITY
SANITARY
TOILET
PAPER

- ABSORBENT TISSUES,
INTERLEAVED FOR
AUTOMATIC FITTINGS
- AVAILABLE EVERY WHERE

ABDUL KADAR MOOSABHAI, 138, Sarang Street
Bombay-3.

As on December 31, 1971 the phenomenal growth of the activities at the Workshops could be judged from the fact that, as against the total value of production Rs. 3.05 crores in 1964-65, the value of production during 1970-71 had risen to the order of Rs. 14.98 crores. Despite this rise in the value of production, the Company had an ambitious plan to further increase production. As a part of this programme, the Company had acquired sanction for an expansion and modernisation project which would enable it to undertake the construction of two ocean going vessels of 15,000 to 20,000 tons DWT capacity per year. Work on this scheme had already started and was expected to be completed by March, 1973. The Company also intended to establish two new items of production, namely the manufacture of barrels and agricultural power tillers. The Company had acquired special competence in the design work for dredgers with the result that it was able to successfully develop the design for a high capacity 10,000 cubic meters per hour of spoil cutter suction dredger for the Ministry of Shipping and Transport, on its own. Similarly, the design for a 4000 ton hopper suction dredger for the Vishakhapatnam Port Trust had also been developed by the Company's own designers. It could be claimed that this indigenous development had marked a breakthrough in the building of sophisticated floating craft like medium capacity dredgers in the country. Among the important vessels under construction during the year were, one high capacity cutter suction dredger for the Ministry of Shipping and Transport, one dredger each for the Bhagirathi Hoogly Improvement Works and the Madras Port, and two dredgers for Cochin Port Trust. The Calcutta Port Commissioners had placed an order for the estimated value of Rs. 9 crores for a 7,500 ton hopper capacity Esturian dredger for the Haldia Dock Project. This was the biggest single order ever received.

In the field of general engineering, the Company had received large value orders for sophisticated technological structures and equipment for Bokaro Steel Plant. Some heavy structural works executed by the Company for the Bokaro Steel Plant during 1970-71 included gas coolers, battery cyclones, mechanical decantors, electro static precipitators, saturators, and dephenolishing scrubber. Major sophisticated mechanical equipments successfully produced in the Yard for Bokaro Steel Plant requirements included mechanical crystalisers, twin reversing valves, inclined conveyors and vibrating, feeders and sections. The Company had also received a large value order for the supply of material handling equipment for the Neyveli Lignite Corporation. Despite the very significant achievements on its own, the Company had not been content with its successes. It had also been playing a significant part in the revival of engineering industry in the Eastern region. The Industrial Reconstruction Corporation of India had drawn up the expertise available with the growth oriented management of this Company. As a result of detailed studies carried out by the Company, it had become possible to reopen one large industrial establishment in the Hoogly area, employing over 1600 men. This unit, the National Iron and Steel Co. Ltd., had closed down in October 1970. According to the agreement signed by this unit, it will remain under financial and technical management of the Workshops for a period of five years.

PRAGA TOOLS LIMITED

AS on December 31, 1971, the Company had two divisions, namely, the Machine Tools Division at Kavadiguda in Secunderabad and Forge and Foundry Division. In the Machine Tools Division, the Company was manufacturing light machine tools e.g. drilling machines, 'Praga tools and cutter grinder (Model 411), Praga-Jones and Shipman surface grinders (Models 540 and 540H), Praga Gambin milling machines, machine tool accessories, such as drill chucks, lathe chucks etc. and certain precision items, such as surface plates and gauges. The Forge and Foundry Division was engaged in the manufacture of forgings for auto and diesel spares, railway screw couplings and certain defence items, apart from supplying some of the forgings and castings required by the Machine Tools Division.

In terms of quality and workmanship, the Products of the Company, had, throughout the period, enjoyed very good reputation. Unfortunately, however, the market in respect of the standard items could not pick up. The production and sales of the Company had, therefore, continued to be hit by this factor and the Company had to carry a large inventory of finished goods. The Company, nevertheless, continued to make efforts to step up production and sales. The value of the production achieved during the year 1970-71 touched the figure of Rs. 262.27 lakhs, as against Rs. 187.61 lakhs in 1969-70. The sales during the same period amounted to Rs. 172.59 lakhs as against Rs. 147.27 during the earlier year. During 1971-72, the Company was expected to reach a production level of

WITH OUR WARMEST GREETINGS TO

ALL OFFICERS AND MEN OF
ARMY — NAVY — AIR FORCE
AUXILIARY ARMS AND
DEFENCE PRODUCTION

ESTABLISHMENTS

FROM

Epsilon Engineering Co.

26/28, OLD HANUMAN LANE, BOMBAY-2.
TELEPHONE : 312920

AGENTS FOR

GAMLEN
CHEMICALS

(Manufacturers : Gamlen Chemical Co. (A/Asia) Pvt. Ltd.)

WITH BEST COMPLIMENTS FROM :

Phone 692006—Grams.
"KEWSWITCH"
 BOMBAY-62

Manufacturers of :-

KUSUM ENGINEERING WORKS

PARAS COMPOUND, S. V. ROAD,
 GOREGAON WEST—**BOMBAY-62.**

- **"KEW" IC. SWITCHES**
- **CUTOUTS**
- **FUSE BOARD**
- **FUSE UNITS**

WITH THE COMPLIMENT OF

P. V. BRIGHT STEEL CORPORATION

3/57 HARARWALA BUILDING
GOLPITHA—BOMBAY-4

Phone. 339340—333696

Telex :— 011—3731

Gram :— PIVIBRIGHT.

SPECIALIST

- **BRIGHT BARS**
COMMERCIAL
FREE CUTTING
- **TOOL & ALLOY STEEL**
HIGH SPEED-STEEL, OHNS
STEEL, HCHC STEEL AND
ALL EN SERIES.
- **NON FERROUS METALS**
BRASS; COPPER ALUMI-
NIUM AND BRONZE IN
SHEETS, ROUNDS, PLATES,
PIPES AND ALL SECTIONS.

DEALERS

- **IRON & STEEL**

**M. S. PLATES, SHEETS, FLATS, ROUNDS,
 SQUARES, ANGLES, CHANNELS, BEAMS,
 RAILS, G. I. SHEETS, CRCA SHEETS,
 CUTTING & ALL TYPES OF PROFILE
 CUTTING.**

about Rs. 2.6 crores. The Company had also made significant progress in the indigenisation. The indigenous content of tool and cutter grinder, which was being produced under the technical collaboration of Jones and Shipman of UK had reached 94%. In the case of surface grinders, which were also being produced in technical collaboration of Jones and Shipman, the indigenous content had reached 80% and this was likely to increase to 90% in another year or so. Similarly the Praga Cambin milling machines had been indigenised upto more than 90%. Considerable progress had been made in regard to the indigenisation of the accessories of these machines also. To counteract the effect of the recession the Company had undertaken diversification plan which included heavy duty production drilling machines, thread rolling machines and George Fischer copy lathes. Of these, the first two items were already under production and the third was expected to start from 1972-73. Company had also taken several steps to strengthen the management organisation by way of setting up production, planning and control, costing and material management cells. The immediate effect of these steps had been felt in the increase in the financial burden. However, it was hoped that ultimately they would pay good dividends.

BHARAT EARTH MOVERS LIMITED

AS on December 31, 1971, the Company had two factories...the Rail Coach Division located at Bangalore and Earth Moving Equipment Factory located at Kolar Gold Fields. The Rail Coach Division was manufacturing broad-gauge integral railcoaches of different models. The Earth Moving Factory was manufacturing heavy earthmoving equipment, such as scrapers dumpers, motor graders, wheeled tractors (front and loaders) and crawler tractors, of 3 sizes. The manufacture of scrapers dumpers and motor graders was under technical collaboration of Westinghouse Air Brake Company of US, Tigar 120 SK wheeled tractors under technical collaboration of Radje Dake of Yugoslavia and the crawler tractors under the technical collaboration of Komatsu Manufacturing Company of Japan.

The Railcoach Factory had produced 270 railcoaches during each of the years 1969-70 and 1970-71. The factory was expected to produce the same number during the year 1971-72. Government sanction had been granted to the expansion of the capacity from the existing 270 nos to 400 nos of railcoaches per year. The Company had already initiated action to implement this expansion Project. The Earth Moving Division, still under construction, had substantially been completed and the bulk of the plant and machinery for the various shops had also been ordered. A substantial number of machines had already been received and installed. Certain essential machinery and equipment for the gear shop and heat treatment shop, were yet to be received and these facilities were expected to be commissioned during 1972-73. The Company had fixed substantially higher targets of production for the scrapers, LW 35 haulpaks and D80 crawler tractors for the year 1971-72. However, the actual production of these items had been affected due to delay in receipt of imported CKDs and essential indigenous components, particularly castings. The labour unrest during August-September-71, and difficulties in regard to the supply of oxygen and acetylene required for the fabrication work in plate shop had also contributed to the shortfall in production. In the field of

indigenisation, the Company had kept up its efforts to increase the pace. The engines, body chassis, tyres, radiators, fuel tank, batteries and electrical system and seat and guards in the case of all the equipment had been indigenised. The main frame, 'C' frame, undercarriage parts (track, frame, rollers, carriers, links) the dozer blade and draw bar hooks etc. in the case of crawler tractors has also been indigenised. With these efforts, the indigenous content in the case of most of the equipment had already reached the range of 60 to 64 per cent and this was expected to exceed 70% in 1972-73. The items which were yet to be indigenised comprised the main clutch assembly, transmission and final drive system, steering clutch, brake and control systems and the hydraulic systems. These were also expected to be indigenised in the course of the next two years or so when the indigenous content of the earth moving equipment produced was expected to be 85%. The Research and Development Cell, during this period, successfully completed the development of a 2.3 cubic metres capacity indigenous shovel which was to be fitted to the D80-A-12 crawler tractors. This cell had also developed a power lift transmission for D50-15 crawler tractors. The design work on the development of an indigenous shower of 1-3 cubic metres capacity had also been completed.

GOA SHIPYARD LIMITED

ORIGINALLY, this Company was formed under Portuguese Law in November, 1957. After the liberation of Goa, the Company was given on lease to Mazagon Dock Limited, with effect from 14th. April, 1972. In the initial stages the Yard was used for minor ship repairs. In September, 1967, the lease was terminated and the Company was reconstituted as a subsidiary of Mazagon Dock Limited. The name of the Company was changed to **Goa Shipyard Limited**. It started functioning under its own management and a Board of Directors with effect from October 1, 1967.

Until very recently, the activities of the Yard were mainly confined to barge repair and the construction of ore-carrier barges upto 500 ton capacity. With a view to developing the facilities for building larger craft and undertaking repairs to such craft, an interim development plan providing for the development of the platers shops, fitting and machine shops, internal combustion engine shop, joiner shop, lift gear testing facilities and hydraulic chain testing facilities etc. was sanctioned. The scheme, involving a capital cost of about 19.5 lakhs, had been completed to enable the Yard to construct small dredgers, barges upto 1000 ton DWM, fishing trawlers, tugs, and other harbour craft and also to carry out repairs to such vessels. In order to cope with the increased work load in new construction, the Company undertook in 1969-70 the construction of an additional slipway No. 3, at a cost of Rs. 12.70 lakhs. This slipway had been completed and commissioned. Additional machinery, like winches and trolley were under process of installation. One of the two bays in the existing production shops was being extended. In view of the fact that all these additional facilities would still not be fully sufficient to cope with the expected increase of inflow of orders for new construction, the Company was considering further expansion of the Yard.

During the year 1970-71, the Company built and delivered two 500 ton ore-carrier barges and three fishing trawlers. Another trawler, also completed during the period, was awaiting delivery to owners. During the year 1971-72, the Company received orders for tug from the Bombay Port Trust, fifteen 500 ton ore-carrier barges and five harbour utility tugs. Of these, 3 barges had already been delivered. A further order for six more barges was also secured. Besides constructing the new vessels, the Yard was also engaged in ship and barge repairing work and general engineering. During 1970-71, the Yard repaired 100 ships and 97 barges, including 41 foreign ships.

BHARAT DYNAMICS LIMITED

THE latest and destined to be the most important Defence Production undertaking under the Ministry of Defence, and the one to catapult India into missiles era, Bharat Dynamics Limited, commenced about the middle of July, 1971. There was slight delay in starting the production due to non-receipt in time of the imported sub-assemblies, equipment and tooling. However, the shortfall was soon made up. During the year 1971-72, the Company expected to achieve a turnover of about Rs. 103 lakhs. The turnover during 1972-73 was likely to be of the order of Rs. 201 lakhs. With a view to achieving maximum indigenisation at the earliest, the Company had decided to set up a development wing to attend to indigenisation and also product improvement. The indigenisation efforts were to cover, not only the various components but also raw materials for this purpose, the Company was to maintain a close liaison with the Defence Research and Development laboratories and agencies.

DEPARTMENT OF DEFENCE SUPPLIES

THE Department was created in the wake of the Indo-Pakistani conflict of 1965. It was entrusted with the responsibility of mobilisation of indigenous resources with a view to establishing independent sources of supply of various type of defence equipment, components and spares for the Services. It was also entrusted with the task of the development of electronics. The Department was to undertake the indigenous development, not only for items till then imported, but also of new items introduced into the Services.

In order to acquaint the industry in the country with the wide range and variety of defence requirements, the Department, as on December 31, 1971, had set up sample rooms at Bombay, Calcutta, Delhi and Madras, exhibiting over 14,000 items. Efforts were being made to further popularise these sample rooms and to attract more entrepreneurs of the country to them so that the latter could participate more effectively in the defence effort. Technical defence personnel were posted in the sample rooms to advise the manufacturers in the production of defence stores. In its task of indigenisation, the Department was assisted by Technical Committees consisting of technical, financial and administrative experts. Earlier, there were seven Committees dealing with import substitution in the following spheres of defence requirements. (a) Armament Stores, (b) Electronic/Electrical Stores, (c) Vehicles Stores, (d) Engineer Stores, (e) Marine Stores, (f) Medical and (g) General Stores. In order to give a fillip to the indigenisation of the various components, assemblies and sub-assemblies

needed for the Vijayanta tanks, an eighth committee was formed with headquarters at Avadi. The Committee was entrusted the task of dealing exclusively with items required for the production of Vijayanta tanks. Proposals for the formation of another Committee to deal with components and spares for special vehicles and for strengthening marine stores and Electrical/Electronic Stores Committees, with a view to expanding their activities, were also under consideration. Till that time the import substitution work of the Air Force Stores/Aeronautical items was being handled by the Department of Defence Production. A Proposal to entrust this work to the Department of Defence Supplies was under consideration. The Committees, already formed and functioning, were empowered to take decision on cases costing Rs. 3 lakhs. These were enhanced to Rs. 5 Lakhs as a first step and were proposed to be enhanced to Rs. 10 lakhs, when some further steps to strengthen the Committees had been taken.

Apart and aside of the assistance given to the public sector undertakings under the Ministry of Defence, earlier pursuing their own independent indigenisation programmes, the items dealt with by the Department were mostly of sophisticated nature. The enormity of the task could be judged from the facts ; (a) They were being developed and or produced in the country for the first time and this involved considerable development effort. The time taken in developing the items turned out to be much more than first estimated. (b) The defence stores were subject to very stringent specification and close tolerances. In many cases, the firms which took these orders did not have the experience and expertise to undertake development and production of such stores. They had, therefore, to make considerable effort in producing prototypes and production samples for approval. Despite these constraints, a large number of sophisticated and high precision items were successfully developed through the Department. Not content with what had been achieved, the Department was taking concerted action to further accelerate the deliveries. It was also taking steps to further streamline the testing procedures and to dovetail the time required by various agencies for test and trials on the advance samples before the start of bulk production. Payment procedures were also being simplified to facilitate rotation of the capital by the entrepreneur. Financial assistance was being liberally given to enable the entrepreneur to meet investments on raw materials. Assistance was also being given for speedy import of raw materials where this could not be avoided.

For anything in

TEFLON
P. T. F. E.
FLUON

TEFLON

RODS, SHEETS, STRIPS, ROPES,
GASKETS, MOULDINGS, ETC.

ASK

PHONE
259897

S. M. SHAH & COMPANY

19, Bank Street, Fort, Bombay-1.

**WITH OUR
WARMEST
GREETINGS
TO OUR
GALLANT
ARMED
FORCES**

KAMANI OIL MILLS

(Props: Chawla Bros. Pvt. Ltd.)

Manufacturers of

"JAI JAWAN"

100% Pure Refined Groundnut Oil



OFFICE :— 365, KATHA BAZAR,, BOMBAY 9 PHONES : 323116; 320113

MILL :— LAL BAG, BOMBAY 12. PHONES : 441893; 445885

SOLVENT PLANT :— SAKI NAKA, CHANDIVALI ESTATE,

PHONES : 582442, 582443.

TELEX : 2550—3430

REMEMBER

**ALL PATRIOTIC INDIANS ARE PROUD OF THE
JAWANS WHO HAVE BROUGHT GLORY TO
OUR MOTHERLAND—ALL THRIFTY HOUSE-
WIVES PREFER OUR "JAI JAWAN" GROUND-
NUT OIL FOR TASTY AND HEALTHFUL DISHES**

THE RAGHUVANSHI MILLS LIMITED

11-12, HAINES ROAD,
B O M B A Y - 1 3.

MANUFACTURERS OF:

HIGH QUALITY YARN 30s TO 120s

CARDED AND COMBED ON

CONES HANKS

SPECIAL QUALITIES FOR

POWER AND HANDLOOM ON

SIZED BEAMS AND WEST
PRINS ALSO

HIGH QUALITY SATIN &

NYLON TERENE, TERY-

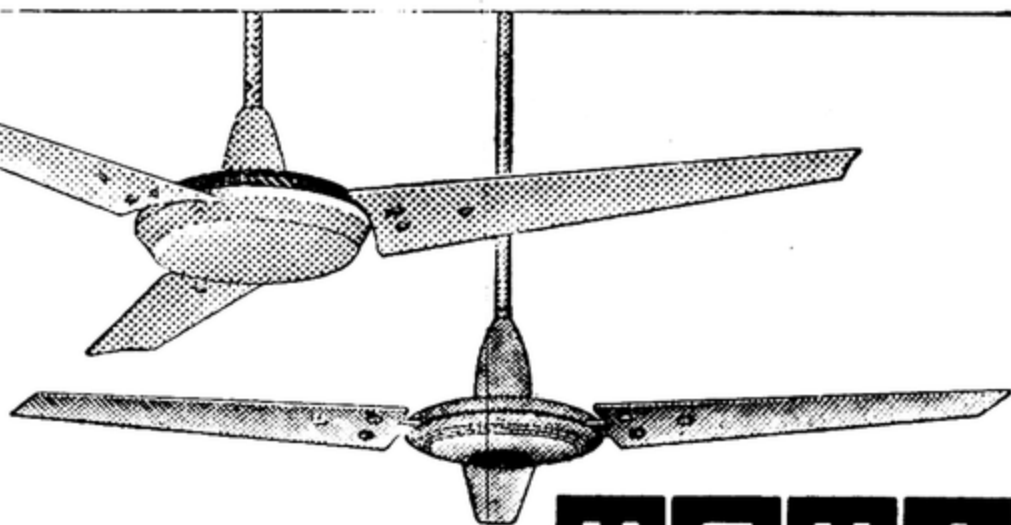
COT, SHIRTINGS,

SUITINGS & SAREES

PHONE
377425 (3 LINES)

GRAMS
RAGHUBIR

ALL IN
ALLURING
DESIGNS AND ATTRACTIVE
COLOURS



Better buy **USHA** it's **5** times better



LOOKS

USHA is better in looks...sleek, elegant and offers a wide choice, attractive styles and colour.

RANGE

USHA is better in range... ceiling, table, pedestal, mobile and bracket fans, air circulators, and exhaust fans...to suit every need and pocket.

PERFORMANCE

USHA is better in performance...incorporates highly efficient motor units, specially contoured blades for maximum service value.

SERVICE

USHA is better in service... over 2,000 conveniently situated service centres in every corner of India.

GUARANTEE

And don't forget, USHA gives a better guarantee—a two-year guarantee.



BETTER BUY **USHA** YOU CAN'T BUY BETTER